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ORIGINAL ARTICLE

EVALUATION BETWEEN ANGINA SYMPTOMS AND DEGREES OF CORONARY OBSTRUCTION IN PATIENTS INDICATED FOR CORONARY ANGIOGRAPHY

GUILHERME DINIZ PRUDENTE [1], ANA LÍGIA VALERIANO DE OLIVEIRA [1], JORDANA GONCALVES DE MIRANDA AMARAL [1], ANNA KARLLA GOMES MOREIRA FARINHA [1], ANDRESSA PIMENTEL AFIUNE [1], LUCAS LOURENÇO BORGES [1], MAURÍCIO LOPES PRUDENTE [2], GIULLIANO GARDENGHI [2]

ABSTRACT

Introduction: Patients with coronary artery disease (CAD) have angina as the main clinical manifestation. Angina limits the quality of life and can be evaluated by several methods being one of the main cardiac catheterization (CCTA).

Objective: This study aims to compare the symptoms of pre-intervention angina with the findings in CC.

Methods: Cross-sectional study with 50 patients referred to the hemodynamics service to undergo CCTA for CAD between August and October 2020. The Seattle Angina Questionnaire (SAQ) was used to assess the most relevant clinical manifestations of CAD before intervention. After CCTA, the images were analyzed by two experienced interventional cardiologists to determine the lesions. A sequential analysis of the right and left coronary arteries, as well as their main branches, and eventual surgical grafts previously implanted was performed. Patients were divided into two groups: those with coronary lesions ≥ 70% and those with normal ("white") CCTA (lesions < 70% or no lesions). Subsequently, they were compared according to their baseline characteristics and scores obtained from the SAQ. Statistical analysis used unpaired t and chi-square tests. Non-parametric measures were tested by Fisher's test, with significance at 5%.

Results: Patients with lesions ≥ 70% had worse health perceptions when compared to patients with normal CCTA (Lesions ≥ 70%: 68.0 ± 17.3 points versus white CCTA: 81.3 ± 14.1 points, p: 0.01). Other QAS domains did not show significant differences.

Conclusion: It was observed that patients with coronary lesions ≥ 70% had a worse perception of health than those with "white" CCTA. The SAQ is an important instrument in the clinical assessment of patients with CAD and may be an option for evaluating symptoms in this population.

KEYWORDS: CARDIAC CATHETERIZATION; ANGINA PECTORIS; ACUTE CORONARY SYNDROME; HEALTH LEVEL

INTRODUCTION

Cardiovascular diseases are the main causes of mortality in the world. In Brazil, according to the Ministry of Health (MS), it is estimated that about 147,000 people died in 2019 from this group of diseases.[1] CAD has been standing out among these cardiovascular diseases, as it is among the main causes of mortality and morbidity. In the Midwest region, it is estimated 37% of the national mortality from CAD.[2]

Characterized by remodeling and narrowing of the coronary arteries, CAD has a wide spectrum of clinical manifestations, which can present as stable angina or acute coronary syndrome (ACS). The increasing morbidity and mortality in Brazil is driven by population aging combined with risk factors such as smoking, high blood pressure, diabetes, dyslipidemia, sedentary lifestyle, atherogenic diets and personal history.[2] In Brazil, it is estimated that there are 30 cases of stable angina for each case of acute infarction. Therefore, the importance of a careful and careful investigation to diagnose it is noted, also due to its clinical severity and potential risk.[3]

Aiming to assess the health status of patients with CAD, a sensitive and specific tool, the Seattle Angina Questionnaire (SAQ) was developed.[4] The SAQ is used to assess changes in angina frequency, stability and quality of life related to health after myocardial revascularization or clinical drug treatment in patients with ACS.

SCAs share the same anatomical substrate, atherosclerotic plaque rupture or erosion, with different degrees of thrombosis, which will result in different clinical consequences. Therefore, unstable angina is a milder form of this spectrum, and it is obvious to see that, according to the SAQ indices, patients with unstable angina have the best health status indices compared to patients with infarction.[5]

Angiography or cardiac catheterization (CCTA) emerged as an exam to identify the presence of arterial obstructions, measuring the severity of pathological variants and evaluating the need for interventions.[6] CCTA is indicated for diagnostic purposes in patients with non-specific chest pain, angina stable, acute ischemic syndromes,

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myocardial infarction and some special clinical situations[7], being considered the gold standard method for the diagnosis of CAD.[8] In addition, this procedure for diagnostic purposes is of low risk, as the American College of Cardiology points out that the complication rate is less than 1:1000.6 Therefore, angiography or CAE are preferable for stable patients with a high probability of CAD.[9]

In the present study, the hypothesis that CC findings in patients with CAD may present significant differences in relation to their health status and angina manifestation was tested, with the possibility, for example, of symptomatic patients having "white" CCTA (without no significant change) and the degree of angina does not correspond to the degree of coronary obstruction. Therefore, carrying out an investigation with the SAQ can help to better understand each of these clinical conditions.

METHODS

This is an observational cross-sectional study carried out at Hospital Encore, in the city of Aparecida de Goiânia, in Goiás. The patients included were those referred to the hospital's hemodynamics service for CCTA during the period between August and October 2020. Patients with disabling neurological or psychiatric disease and those with previously diagnosed CAD and/or who had already undergone CC/angioplasty were excluded. A total of 50 patients were evaluated, 25 men and 25 women.

The present study was approved by the Research Ethics Committee of the Hospital de Urgências de Goiânia (CAAE: 32730920.60000.0033) and all participants signed an Informed Consent Form.

The SAQ was used as an instrument to assess the most relevant clinical manifestations of CAD in the pre-intervention setting, being applied to patients 60 minutes before the procedure. The five domains of the SAQ were analyzed: physical limitation (D1), stability (D2), frequency of anginal symptoms (D3), satisfaction with the treatment (D4) and illness perception (D5).

The first domain of the questionnaire uses questions to assess the ability to perform activities of daily living, the questions in D2 analyze the severity of symptoms and those in D3 analyze the frequency and periodicity with which symptoms occur. The questions for D4 and D5 verify, with the patient, their satisfaction of living despite the disease and the fear of dying suddenly, respectively. According to the patients' responses, each domain receives indices ranging from 0 to 100. The designated points are related to the functionality status of each domain. The higher the score, the better the quality of life.

After the application of the SAQ and the performance of the CCTA, the angiographic film was analyzed by two interventional cardiologists in a sequential analysis of the right and left coronary arteries as well as their main branches and finally any previously implanted surgical grafts (saphenous and/or mammary bypass) . These vessels were evaluated and described in terms of 5 characteristics: 1- the identification of the vessel, 2- its angiographic importance and the irrigated territory, 3- the presence or absence of obstructive lesions and/or other relevant alterations, 4- visual angiographic quantification the degree of stenosis in percentage terms (ranging from parietal irregularities when up to 20%, and from 10% in 10% to 100%, when fully occluded) and 5- the location of this lesion/alteration in the vessel in question (origin, proximal thirds , medium or distal, their combination or diffusely in the vessel). Thereafter, the clinical and angiographic characteristics of the patients were determined and analyzed.

Finally, patients were divided into two groups: those with coronary lesions above 70% and those with normal or "white" CCTA (lesions < 70% or no lesions). The two groups were compared according to their baseline characteristics and scores obtained from the SAQ. Thus, the symptoms of angina, present in the pre-intervention scenario, were compared with the findings in the diagnostic CCTA.

Considering the presentation of data in the results, categorical variables were expressed as absolute numbers and percentages. Continuous variables were expressed as mean ± standard deviation. The Microsoft Excel 365® version 2016 software was used for data tabulation. Variables were tested for normality distribution using the Shapiro-Wilk test. Anthropometric data were examined using unpaired t-tests and chi-square analyses. Nonparametric measures were tested using Fisher's test. A P value < 0.05 was considered statistically significant for all tests. Statistical analyzes were performed using Statistica 10.0 software (Statsoft Inc., Tulsa, Oklahoma, USA).

RESULTS

Fifty patients were included in the present study, half female and half male. Of the patients who make up the sample, 35 (70%) had a coronary lesion greater than or equal to 70% and 15 (30%) had a normal CCTA. The anthropometric and clinical characteristics of the two groups are presented and compared in Table 1. The great difference between the groups regarding gender, smoking and the presence of symptoms of acute coronary syndrome is highlighted.

Analyzed Variables	Lesion ≥ 70% (n=35)	Normal CC (n=15)	P value
Age (years)	64 ± 8.8	58 ± 11.1	0.05
BMI (kg/m²)	28 ± 5.2	27 ± 5.3	0.93
Males, n (%)	22 (63)	3 (20)	<0.01
Hypertension, n (%)	31 (89)	10 (67)	0.07
Dyslipidemia, n (%)	25 (71)	7 (47)	0.10
Smoking, n (%)	19 (54)	2 (13)	0.02
Family history, n (%)	28 (80)	10 (67)	0.32
Sedentary lifestyle, n (%)	25 (71)	10 (67)	0.74
Diabetes Mellitus, n (%)	20 (57)	5 (33)	0.13
SCA, n (%)	19 (54)	0	<0.01
Time of symptoms (months)	11.4 ± 31.9	4.0 ± 9.0	0.39

CCTA: coronary angiography; BMI: body mass index; ACS: acute coronary syndrome.

Table 1 – Comparison between the anthropometric and clinical characteristics of the participants (n=50)

Clogged Vessels	n (%)	Percentage of obstruction per vessel
RCA	24 (18%)	73 ± 26
PD	6 (5%)	76 ± 22
RPV	4 (3%)	65 ± 21
LMCA	4 (3%)	35 ± 6
AD	27 (21%)	78 ± 19
DB1	17 (13%)	71 ± 22
DB2	5 (4%)	84 ± 19
CX	15 (11%)	56 ± 22
DB	7 (6%)	73 ± 26
MB1	14 (11%)	78 ± 23
MB2	3 (2%)	63 ± 21
LPV	3 (2%)	60 ± 26
PDCA	1 (1%)	90
Total of vessels	130 (100%)	

RCA: right coronary artery; PD: posterior descending; RPV: right posterior ventricular; LMCA: left main coronary artery; AD: anterior descendant; AD: anterior descendant; DB1: first diagonal branch; DB2: second diagonal branch; CX: circumflex; DB: diagonal branch; MB1: first marginal branch; MB2: second diagonal branch; LPV: left posterior ventricular; PDCA: posterior descending circumflex artery; Values indicated in absolute numbers and/or percentage or mean ± standard deviation.

Table 2 - Angiographic data of volunteers who presented obstruction greater than 70% in one of the coronary arteries.

Domains	Lesão ≥ 70%	CATE branco	Valor de P
Limitation of physical activity	81 ± 16,8	78 ± 16,0	0,50
Angina severity	45 ± 30,8	43 ± 22,1	0,85
Angina frequency	72 ± 25,3	78 ± 19,0	0,41
Satisfaction with treatment	90 ± 16,1	91 ± 14,5	0,86
Disease perception	67 ± 21,0	62 ± 27,6	0,45
Perception of one's health	68 ± 17,3	81 ± 14,1	0,01

CCTA: coronary angiography. Values indicated in mean and standard deviation.

Table 3 – Comparison of Seattle Angina Questionnaire scores between groups.

DISCUSSION

The present study found that patients with obstructive lesions greater than 70% had worse health perceptions when compared to patients with normal or "white" CCTA. Other SAQ domains did not show significant differences. These data coincide with the results found in the studies by Marino et al., Lima et al., and Reich et al.[10-12]

The analysis of the results showed a higher prevalence of severe coronary lesions (≥70%) in male patients aged over 60 years. This finding was in agreement with three other important studies found in the literature, which highlighted the same profile of patients as having more severe injuries. Conti et al., with a sample of 236 patients, observed more serious injuries in 78% of the male population. Costa et al. analyzed 200 patients and found that 64% of patients with severe injuries were men and older than 60 years. And Monfroi et al. also confirmed that men aged > 60 years have a higher incidence of serious injuries.[13-15]

In the analysis of the SAQ, significance was observed in the score attributed to the patients' perception of their own health. The group of patients with coronary lesions equal to or greater than 70% gave lower marks for their own health (Lesions ≥ 70%: 68.0 ± 17.3 points versus normal CCTA: 81.3 ± 14.1 points, p: 0 .01). In the same sense, in the Brazilian studies by Santos et al. and Quadros et al. the patients' manifested symptoms correlated with the anatomical findings in the examination. [5, 16-17] Thus, in view of the chronicity of CAD and the tendency of patients to have bad lifestyle habits, it is justifiable that patients with larger lesions feel sicker, especially if questioned right before performing an invasive procedure.

In view of this finding, it is essential that, in face of any patient indicated for CCTA and investigation of CAD or potential ischemia, the professional responsible for the care of this patient reinforces the importance of adopting healthy lifestyle habits. According to the ISCHEMIA study, routine invasive therapy does not promote a significant reduction in major adverse ischemic events compared to optimal clinical therapy among stable patients with moderate ischemia in lesions that do not involve the left main coronary artery.[18] Thus , it is up to the health professional to create strategies (nutritional guidance, encouragement of exercise, maintenance of regular use of medications, anti-stress measures) to improve the quality of life and reduce the poor perception of their own health by this patient, in addition to avoiding that it relapses in some acute coronary event.

In the other domains, the differences between the groups were not significant. In this sense, it is important to remember that the SAQ is a measurement instrument considered clinically important according to the study by Spetus et al., being one among other options for the assessment of anginal symptoms, such as: the Rose questionnaire, SF36, Minnesota, WHOQOL and MacNew .[4, 18-20] However, like all of these other questionnaires, the SAQ is subject to significant collection bias.

An important bias to be considered when filling out the SAQ is the recall bias, since angina is an episodic symptom. According to the Food and Drug Administration's Labeling and Endpoints Development Group, patients are unable to accurately remember their health status over time, which could make the questionnaire inaccurate as a recall period of four weeks is required.[18] Furthermore, according to the International Association for the Study of Pain, the symptom of pain is an unpleasant sensory and emotional experience. Therefore, the fact that pain is a subjective and multifactorial symptom may justify the inability to observe differences in other domains of the questionnaire.[7,21-23]

Furthermore, use of the SAQ was questioned against daily records of angina frequency and use of sublingual nitroglycerin. To perform this comparison, the TERISA study was used, which analyzed the patients' angina through an electronic diary and the SAQ. This work showed that the SAQ may have a reduced accuracy compared to the daily reports, as it only portrays an angina average over the last four weeks, which represents a potential limitation of this questionnaire.[21] The study by Chan et al. also suggests that the SAQ has limited use in clinical practice due to its size, as an alternative, the author validated a reduced SAQ with only 7 items which increased the feasibility of the daily use of the questionnaire.[22]

The study had limitations that deserve to be considered. Due to its performance in a hemodynamics service in which the sample did not come exclusively from the institution, it was impossible to catalog the complementary exams used to justify the indication of coronary angiography. Furthermore, the patients had a heterogeneous angina profile, with different classifications, frequency and duration. However, the CCTA performed in the service were conducted by a medical team of qualified hemodynamicists and homogeneous training, which minimizes the operator-dependent bias in the analysis of angiographic films. Furthermore, it is noteworthy that the study through questionnaires is a subjective method of assessment. The questionnaire was applied up to 60 minutes before the coronary angiography, which can lead to inaccurate data due to the emotional and memory bias of each patient, which can influence the perception of symptoms. Thus, it is possible that the application of the questionnaire outside the pre-intervention environment could bring different results due to the change in the psychological and subjective factor that has an important influence on the questionnaire.

CONCLUSION

It was observed that patients with coronary lesions ≥ 70% had a worse perception of health than those with normal or "white" CCTA. The SAQ is an important instrument in the clinical assessment of patients with CAD and may be an option for evaluating symptoms in this population.

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ORIGINAL ARTICLE

THE AGING PROCESS AS A TRAUMA AGENT

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ABSTRACT

The present work aims to identify the origin of the trauma suffered by the elderly as well as the associated risk factors and the main consequences. Today's society is inserted in a plot of great social transformations, one of them being the phenomenon known as demographic transition. This, in turn, consists in reducing fertility and mortality rates, reflecting the change in the postmodern social body, formerly young, and moving towards an increasing contingent of the elderly. It is noteworthy that the geriatric and gerontological literature considers an elderly person from 65 years of age. It is noticed that the decrease in physiological reserve in the elderly may be directly related to physical trauma in this population. Changes related to the central nervous system as well as the musculoskeletal system may influence the increased incidence of trauma in the elderly. Therefore, it is necessary to understand the changes related to aging and the risk factors associated with trauma in order to identify and intervene in the main consequences of trauma in the elderly.

KEYWORDS: ELDERLY; TRAUMA. EPIDEMIOLOGY; RISK FACTORS

INTRODUCTION

Contemporary society is part of a phenomenon known as demographic transition, caused by the reduction of fertility and mortality rates and reflecting on the rebuilding of the social body that was once young, and moving towards an increasing contingent of elderly people[1].

Commonly, the geriatric and gerontological literature considers an elderly individual over 65 years of age. Faced with the demographic transition process, with the increase in life expectancy, the elderly population is increasingly subject to a period of dependence and need for care before the end of life. Consequently, geriatric traumatology, a branch of geriatrics that addresses the elderly injured by external causes, the nature of the injuries and the treatment, becomes increasingly relevant[2].

Trauma is defined as a harmful event that arises from the release of energy or physical barriers to the normal flow of energy and this can be of mechanical, chemical, thermal, irradiation or electrical origin.[3]. Although trauma is more frequent in elderly individuals and geriatric emergencies are mainly clinical in nature, trauma in the elderly is a remarkable condition since injuries easily tolerated by young patients can result in considerable mortality rates in the elderly. In the elderly, trauma is one of the main causes of injuries, disabilities and hospitalizations, presenting itself as the fifth leading cause of death in this population, and aging directly influences the increase in morbidity and mortality rates related to trauma [4].

The decrease in physiological reserve in the elderly, that is, organic changes related to aging, may be directly related to physical trauma. The central nervous system presents a progressive reduction in psychomotor capacity and memory, altering posture and often gait; there is a decrease in visual and hearing acuity; in the locomotor system there is loss of muscle mass with weakness, decreased height and bone demineralization, especially in women, leading to osteoporosis and greater risk of falls and fractures.

Care for elderly trauma patients follows the same parameters as adults, respecting the peculiarities characterized by anatomical and functional changes, presence of associated diseases and use of medications [2]. With advancing age, medical problems have a systemic impact on the individual's ability to resist even minor traumas, that is, mortality is directly proportional to the number of pre-existing diseases [4].

OBJECTIVES

Identify the origin of traumas suffered by the elderly as well as the associated risk factors and main consequences.

METHODS

This is a scientific literature review study which comprised a series of articles searched in the database of the Latin American and Caribbean Literature in Health Sciences (LILACS), the International Health Sciences Literature (Medline) and of Scientific Electronic Library Online (Scielo).

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Searches in the databases began on August 23, 2019. With the keywords "elderly", "trauma", "epidemiology", "risk factors" and the main objective of the work guiding the research, a total of 25 articles were selected, and, of these, 16 were excluded, remaining 9 articles to compose the body of the work. The selection criteria for the remaining articles were based on: publications made in Portuguese and English. Publication date was not evaluated as a selection criterion.

After listing the articles that made up the study, a detailed reading of the manuscripts was started, recording the relevant data, and then carrying out the effective elaboration of the work.

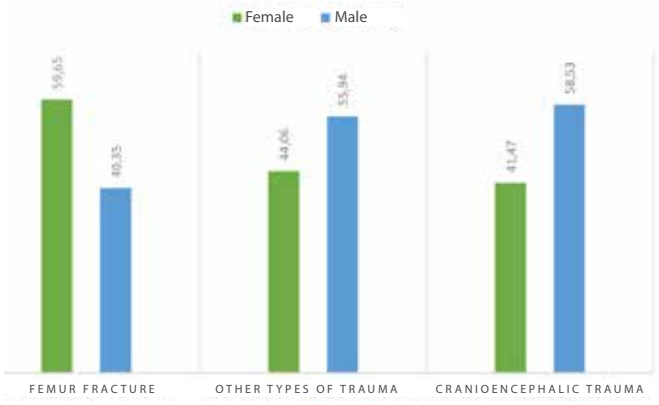
RESULTS

A study carried out by the American Geriatric Society pointed out the visual deficit as one of the intrinsic risk factors for falls in the elderly. Low visual acuity can be a factor related to loss of balance, leading to falls, by decreasing postural stability, or indirectly, by reducing mobility and physical function.[5]. Ivers et al, through a cohort of The Blue Mountains Eyes Study, investigated the association between visual impairment and falls in 3654 elderly individuals in the community. The results indicated that a low visual function (glare, contrast, acuity and visual field) is statistically related to two or more episodes of falls.[6]

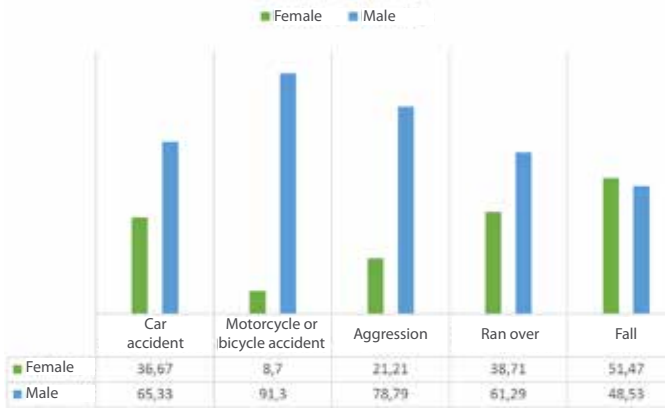
Trauma in an elderly individual has far more impacting repercussions when compared to other age groups in the population. It is the fifth leading cause of mortality in the age group over 65 years of age, with the fall being responsible for 70% of accidental deaths in people above 75 years old[4]. In addition, trauma brings complications inherent to hospitalization, such as pneumonia, acute myocardial infarction and pulmonary thromboembolism[7]. Furthermore, fall trauma has repercussions in the psychosocial sphere, as the loss of confidence to walk safely can result in worsening of functional decline, depression, low self-esteem and social isolation. After a fall, the elderly may restrict their activities due to fear, pain or even their own functional incapacity. Post-fall rehabilitation can be slow and, in the case of prolonged immobility, leads to complications such as venous thromboembolism, pressure ulcers and urinary incontinence. Becoming dependent, the fall victim may demand more time from their caregiver, causing social problems and thus making them more likely to require institutionalization[8].

With the postmodern senescence process, the fall is the occurrence that most affects the elderly over 65 years of age, contributing to the reduction of independence and greater morbidity and mortality. It is noticed that there are several factors that corroborate the occurrence of trauma in the elderly, such as being run over due to lack of infrastructure (intervention in the conclusion), reduction in the physiological reserve associated with aging, the coexistence of comorbidities associated with the use of different medications. Oliveira et al, through a retrospective analysis in order to identify the main etiologies of trauma in elderly in emergency care, observed that automobile, motorcycle, cycling, aggression and pedestrian accidents were more frequent in male elderly, with falls being more frequent in elderly females. It was also found that most elderly people who were retired, housewives or who worked in the area of general services presented falls as the main cause of trauma.

On the other hand, the elderly who worked in the commercial area had car accidents as the etiology of trauma. Finally, the aforementioned study also allowed us to infer that falls are the main cause of trauma in the elderly and that, in most cases, femur fractures are linked to this event, followed by head trauma and other types of trauma[9].



Graph 1. Percentage distribution of types of trauma in relation to gender. Source: Adapted from Oliveira K. A de et al, 2013.



Graph 2. Percentage distribution of causes of trauma by gender. Source: Adapted from Oliveira K. A de et al, 2013.

DISCUSSION

The bone is a structure that is in a constant process of mineralization and demineralization throughout the individual's life. However, it is observed that the elderly present an organic imbalance in this mineral balance since there is

a predominance of demineralization to the detriment of osteogenesis, leading to loss of bone mass. It is worth noting that women, especially those who are in hypoestrogenism, suffer from this phenomenon more severely, since estrogen is a hormone that stimulates the bone mineralization process. Thus, it is inferred that one of the main factors responsible for bone fragility and therefore a higher risk of fracture is this predominance of senile demineralization.

Regarding the senescence of the central nervous system, it is observed that several changes occur, reflecting the psychomotor and cognitive reduction of the elderly individual. Decreased nerve impulse conduction velocity and reduced brain mass with advancing age may help to understand psychomotor retardation and senile cognitive impairment. It is noticed that these changes, in addition to making the individual more physically and psychologically dependent, can make them more susceptible to falls and other accidents due to the reduction or absence of the psychomotor response necessary to avoid trauma.

Associated with aging, there is an increase in the prevalence of sensory deficits, such as auditory and visual ones. It is worth noting that one of the first systems to suffer the impact of physiological aging is the sensory, and particularly the visual. The most frequent visual changes are decreased visual acuity, peripheral visual field, sensitivity to contrast, color discrimination, ability to recover from exposure to blinding light, dark adaptation and the sense of depth.

CONCLUSION

The study in question, based on the literature review, allowed us to conclude that the physiological changes inherent in the aging process are determinant for the increased risk of falls and trauma among the elderly, with a prevalence for males over 65 years of age and highly lethal for individuals over 75 years of age.

Furthermore, it could be observed that traffic accidents and falls caused by the individual's aging process are the main causes of trauma in the elderly.

Finally, trauma in this age group is still a great challenge to be overcome, both in its treatment and management, as well as in the rehabilitation of this individual, as in addition to the physical and physiological sequelae of these injuries, it is also necessary to pay attention, for the psychological ones, which can be as debilitating as the physical for this individual, which contributes to the decline in the quality of life of these individuals.

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ORIGINAL ARTICLE

SUPRACONDYLAR FRACTURES OF THE HUMERUS IN CHILDREN

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ABSTRACT

Objective: Evaluate the sociodemographic and clinical characteristics of pediatric patients treated at a public hospital for supracondylar fracture of the humerus. Material: Observational study based on the analysis of medical records and data from the outpatient follow-up of pediatric patients treated for supracondylar fracture of the humerus. Methods: Frequencies were collected and estimated in relation: age, gender, nerve injury in trauma, vascular injury in trauma, affected limb, classification of the type of injury according to Gartland and need for open reduction. Results: 328 children between 0 and 12 years of age were assisted (average: 5.78 2.47 years). The fixed age group between 5 and 8 years had the highest frequency of injuries (49.7%, n=163). Type III Gartland was the most frequent injury (55.8%, n= 183). Most children with supracondylar fracture of the humerus were male (55.8%, n=183), the left side (non-dominant) was the most affected (60.1%, n=199), the vascular lesion was observed in two cases (0.6%) and nerve damage in 6 cases (1.8%), in which the ulnar nerve was the most affected. In 13.4% of cases (n=44) open reduction was required. Conclusion: Supracondylar fractures of the humerus are more common in male pediatric patients, aged 5 to 8 years, with a low incidence of vascular and nerve damage, and in most cases, without need of open reduction.

KEYWORDS: HUMERAL FRACTURES; CHILD; FRACTURE FIXATION

INTRODUCTION

Supracondylar fracture of the humerus (SFH) is a typical lesion of the immature skeleton, very common in childhood and represents about 13% of all infantile fractures [1], 90% of cases occur in the age group of 5 and 7 years, with 95% being lesions in extension and 5% to 30% have associated neurovascular lesions.[2,3] In childhood, this type of fracture deserves special attention, since bones in this age group have an enormous capacity for growth and remodeling [3]. In 10% to 20% of cases, both neurological and vascular impairment complicates the displaced supracondylar fracture.[4,5]

The classification proposed by Gartland[6] is the most used and is based on the deviation of the coronal plane on elbow radiographs. Type I lesion is one in which no deviation or minimal deviation is observed and with the anterior humeral line intact. Type II shows a small deviation and the fragments are kept in contact (intact posterior cortex) and type III, in which there is complete separation of the fragments (posterior cortex lesion). In 1996, Wilkins[7] proposed a type II subdivision for SFH in children with rotational deviation and in 2006, Leitch et al.8 added a type IV subdivision, in which a multidirectional instability is observed. These of the latter types of fractures are only diagnosable intraoperatively. [9,10] The fractures were subdivided into IIa: intact posterior hinge without rotation and IIb: intact posterior hinge with rotation.[11]

The treatment of type I and II supracondylar fractures is standardized, while the treatment of type III and IV fractures is still under debate.[12] The option for surgical treatment depends on the type of fracture (IIB, III and IV) and factors such as the quality of the reduction, the ability to maintain the reduction, the degree of displacement and the stability of the fracture. [13,14] These fractures generally require an experienced surgeon to obtain a satisfactory result without deformity or functional limitation.[15] Closed reduction with or without Kishner wire fixation is the treatment of choice for most of these fractures.[1] Open reduction promotes results. accurate anatomical findings, but some complications such as infection, iatrogenic neurovascular injuries, elbow stiffness and painful scars may be observed.[16]

Thus, a study was carried out with pediatric patients diagnosed with supracondylar fracture of the humerus who underwent treatment in a public hospital, in order to assess the sociodemographic characteristics and aspects inherent to the type of injury.

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MATERIAL AND METHODS

A retrospective analysis of medical records and data from the outpatient follow-up of pediatric patients who underwent treatment for supracondylar humerus fractures between January and December 2020 in an orthopedic service of a public hospital in the state of Goiás was carried out.

Data were obtained from the electronic medical records sector, collected and estimated the frequencies in relation to the variables: age, gender, nerve injury in trauma, vascular injury in trauma, affected limb, classification of the type of injury according to Gartland6 and need for open reduction. All patients of both genders, between 1 and 12 years old, who underwent treatment for supracondylar humerus fracture were included. The medical records of patients who did not meet the inclusion criteria, children who underwent other surgical treatments in addition to the one studied, and those with incomplete data in the medical record were excluded.

The collected data were evaluated using Microsoft Excel® version 2007 and the Statistical Package for Social Sciences (SPSS®) version 17.0. This study was approved by the Research Ethics Committee, CAEE: 47350621.5.0000.5082.

RESULTS

Over a 12-month period, a total of 330 children with supracondylar fracture of the humerus were seen, two of which were excluded due to the lack of data in the medical records. The remaining 328 children had complete documentation. The mean age at the time of injury was 5.78 years (± 2.47 years) ranging from 1 to 12 years and 183 (55.8%) were boys (Table 1).

The age group between 5 and 8 years had the highest frequency of injuries (49.7%, n=163), followed by the age group from 0 to 4 years (34.8%, n=114) and 9 to 12 years (15 .5%, n=51). As for the classification of fractures (Figure 1), type III Gartland was the most frequent (55.8%, n=183), followed by type II (39.3%, n=129), type IV (3.4 %, n=11) and type I (1.5%, n=5). The left side (non-dominant) was the most affected (60.1%, n=199), vascular damage was observed in only two cases (0.6%) and nerve damage was present in six cases (1.8 %), in which the ulnar nerve was the most affected (Table 1).

In 13.4% of cases (n=44) open reduction was required, with the highest frequency of surgical intervention for fractures classified as Gartland type III in boys, followed by type IV in girls (Figure 2). When evaluating the classification of the type of fracture in relation to the mean age (Table 2), type I injuries were frequent in younger children, aged between 1 and 6 years. Type IV, on the other hand, were more frequent in older children, aged between 2 and 11 years.

Data	Values	
	n	%
Gender		
Male	183	55.8
Females	145	44,2
Affected side		
Right	129	39.3
Left	199	60.7
Vascular injury in trauma		
Yes	2	0.6
No	326	99.4
Nervous injury		
Ulnar nerve	3	0.9
Radial nerve	2	0.6
Middle nerve	1	0.3
Sem lesão	322	98.2
Open Reduction Need		
Yes	44	13.4
No	284	86.6

Figure 1. Classification of injury type according to Gartland6 in children with SFH

Classification	Values	
	n	Mean ± SD
Typel	5	4.00 ± 2.00
Type II	129	5.19 ± 2.26
Type III	183	6.17 ± 2.47
Type IV	11	7.00 ± 3.35
Total	328	5.78 ± 2.47

Figure 2. Frequency of open surgical reduction according to the Gartland6 fracture classification in children with SFH

DISCUSSION

Supracondylar fractures are the most common elbow fractures in children, especially in the first decade of life, with most cases in the age group of 5 to 8 years and result from a fall with the hand extended, resulting in hyperextension of the elbow.[10,17] The mean age at which the supracondylar fracture of the humerus occurred in the present study was 5.78 years, similar data to those observed by Simanovsky et al.[18] (5.4 years) when evaluating a sample consisting of 223 cases in a period of four years in an Israeli Orthopedics service. Barr[20] also observed a peak incidence of supracondylar fractures around 6 years of age and a predominance in males (53%).

The gender ratio observed in the present study was 1.3:1

(boy:girl). Mangwani, Nadarajah and Paterson[19] observed a similar ratio of boys to girls (1.8:1). The highest proportion in males was also evident in the studies by Barr[20] and Khademolhosseini, Rashid and Ibrahim.[21]

In the present study, 183 patients (55.8%) had type III fractures, data similar to those observed by Mangwani, Nadarajah and Paterson19 when evaluating 291 children for a period of 10 years in a university hospital in London, England. These authors reported a 22% rate of open reduction in patients, a value higher than that observed in the present study (13.4%). Both values are similar to those reported in the literature, which range between 1.3% and 46%.[22] The low incidence of severely displaced fractures may explain the lower proportion of open reduction observed in the present study.

Surgical treatment of type III and IV fractures is widely accepted and established in the literature.[4] Tarallo et al.[23] evaluated a total of 55 patients with type III supracondylar fractures of the humerus, divided into two groups, one undergoing open reduction (n=26) and the other closed reduction (n=29), and concluded that open reduction should not be considered a primary treatment option in pediatric patients with type III supracondylar humerus fracture, but in other cases open surgery should be seen as the choice with the best results, not only in the presence of neurovascular injury but also in cases of irreducible fracture.

In the present study, three out of six children had nerve damage in the ulnar nerve (Table 1), although radial nerve damage is the most common, as posterolateral displacement can cause damage to the brachial artery and median nerve.[24] Lyons , Quinn and Stanitski[25], when evaluating 210 cases of children with supracondylar fractures and neurovascular injuries, observed a higher frequency in the median nerve (58.9%), followed by radial (26.4%) and ulnar (14.7%) injuries. Foead et al.[26], when evaluating 66 children with supracondylar fractures, observed the presence of neurological damage in only two cases, one in the ulnar nerve and the other in the radial nerve.

Fracture on the left side, usually the non-dominant side, is more frequent. Baidoo et al.[27] observed a frequency of 62%, close to that observed in the present study (60.7%). Although a smaller portion of the world population has the left hand as the dominant (8% to 15%), during the fall it is common for the non-dominant hand to hit the ground first in order to try to cushion the impact.[28] Also according to Baidoo et al.[27] older children were more likely to suffer type III injuries. In the present study, the same relationship was observed (Table 2), as the more severe the type of injury, the higher the mean age, with type I injuries being more frequent in younger children and type IV in older children.

CONCLUSION

Supracondylar fracture of the humerus is more common in male pediatric patients, aged 5 to 8 years, with a low incidence of vascular and nerve damage, and in most cases, without the need for open reduction.

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CASE REPORT

BIPHASIC SYNOVIAL SARCOMA: A CASE REPORT

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ABSTRACT

Synovial sarcoma is a malignant neoplasm that can affect patients of any age and any anatomical region. It is caused by the translocation of the SS18 gene on chromosome 18 with the SSX gene on chromosome X. The biphasic subtype is characterized by variable areas of spindle cells and glandular-like epithelium. The common clinical presentation of synovial sarcoma is a slow-growing, painless mass that generates a false impression of benignity. Also, the symptoms can be confused with other inflammatory conditions, or even go unnoticed for a long period. The present case report showed a 33-year-old male patient who presented a soft tissue tumor in the right ankle, close to the anterior tibial nerve. The diagnosis of biphasic synovial sarcoma was made after immunohistochemical analysis.

KEYWORDS: SYNOVIAL SARCOMA; MALIGNANT TUMOR; SOFT TISSUE TUMOR.

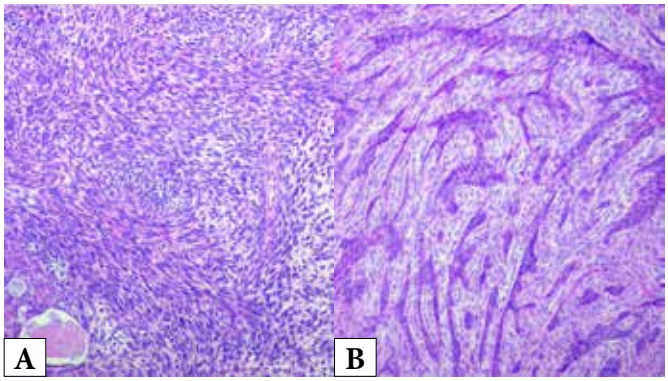
INTRODUCTION

Synovial sarcoma is a translocation-associated soft tissue tumor that affects most people between 15 and 35 years, but can occur in patients of any age. This tumor is found mainly in the arms or legs, especially in the thigh, popliteal fossa and feet, but it can be found anywhere on the body. It is a malignant mesenchymal neoplasm whose origin is not known for sure. It is caused by oncofusion involving the SS18 gene on chromosome 18 with the SSX gene on chromosome X, often SSX1 and SSX2, and rarely SSX4.[1] Synovial sarcoma can be morphologically classified into three main categories: the monophasic type, which is predominantly composed of spindle cell fascicles, the biphasic subtype, which is characterized by variable areas of spindle cells and glandular-type epithelium, and sarcoma poorly differentiated synovial, which commonly includes small round blue cell tissue.

The diagnosis of biphasic synovial sarcoma is based on a combination of findings, including its characteristic morphology, immunohistochemical profile, and identification of the mechanism of translocation.[2] In early stages, small synovial sarcomas can cause insignificant signs and symptoms. As the tumor grows, the patient may notice a mass or swelling in the affected region. In some cases the tumor may limit range of motion or cause numbness and/or pain if it presses on nearby nerves. The common clinical presentation is a slow-growing, painless mass that gives a false impression of benignity.[3] In some cases, the symptoms of a synovial sarcoma may be confused with other inflammatory conditions, such as bursitis or synovitis, or may remain unnoticed for a long period of time. Plain radiographs may show small calcifications within the mass. Synovial sarcoma should be suspected in the presence of characteristic signs and symptoms. Additional tests may be needed to determine the correct diagnosis and prognosis.[4,5]

CASE REPORT

Patient CFA, 33 years old, male, presented a soft tissue tumor in the right ankle, close to the anterior tibial nerve. Initially, the diagnostic hypothesis of Schwannoma was formulated. After performing the immunohistochemical analysis, biphasic synovial sarcoma was diagnosed (Figures A, B, C, D, E and F).



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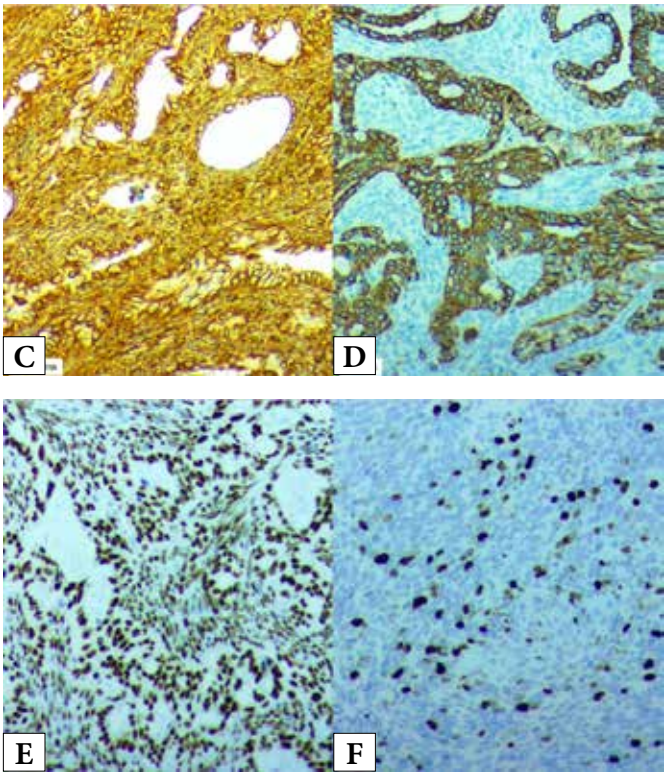

A: H&E staining. B: H&E staining. C: Vimentin staining. D: Staining by CK8/18. E: TLE-1 staining. F: Ki-67 staining.

DISCUSSION

It is known that in the case in question, Schwannoma was suspected in the presentation of the history of the current disease. This tumor has a benign character, encapsulated, slow and usually solitary growth. However, the histopathological findings corroborated the definition of the diagnosis of biphasic synovial sarcoma. In the present case, the patient's age group of 33 years coincides with the prevalence of this comorbidity, as it primarily affects middle-aged individuals[2]. Furthermore, it is a tumor prevalent in the extremities of the body, and in this report, the tumor was located in soft parts of the right ankle. It is important to emphasize that this neoplasm has an undetermined origin[1].

From a histological point of view, this neoplasm can present itself in two types: monophasic and biphasic. This classification is based on the presence or absence of epithelial glandular differentiation close to spindle tumor cells[1]. The biphasic sarcoma, present in the case reported here, presents this coexistence of epithelial and spindle cells. However, monophasic sarcoma, due to its growth pattern similar to other tumors, may demonstrate greater difficulty in histopathological diagnosis.

Classically, the immunohistochemical pattern of this sarcoma demonstrates positivity for Vimentin, epithelial membrane antigen and cytokeratin. In addition, it is generally negative for the S100 protein[5]. In addition to this analysis, cytogenetic analysis of the tumor can also be used. In about 90% of synovial sarcoma cases, the classic t(x;18) (p11; q11) translocation can be identified. It involves the SYT gene from chromosome 18q11 and two genes, SSX1 and SSX2 from chromosome Xq11 [5].

In this report, the immunohistochemical findings were sufficient to characterize the diagnosis, as it presents itself as the biphasic subtype, which presents less difficulty in making sense of it.

CONCLUSION

Synovial sarcoma is a malignant soft tissue tumor that can affect patients of any age, anywhere in the body. Diagnosis is based on a combination of findings, including its characteristic morphology, immunohistochemical profile, and identification of the mechanism of translocation. In the present case report, we present a 33-year-old male patient with a soft tissue tumor in the right ankle adjacent to the anterior tibial nerve. At first, a Schwannoma-type tumor was suspected. However, after immunohistochemical analysis, a diagnosis of biphasic synovial sarcoma was performed.

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CASE REPORT

GIANT BREAST LIPOMA IN MALE: A CASE REPORT

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ABSTRACT

Lipomas are benign tumors composed of mature fat cells. The diagnosis, in most cases, is clinical for those with a typical subcutaneous lipoma. In cases of large lipoma (> 5 cm), irregular in shape and with symptoms of myofascial involvement, ultrasound, computed tomography (CT) or magnetic resonance imaging (MRI) exams help in the diagnosis. Most of the time, no treatment is necessary, as the follow-up is clinical. However, indications for removal of a lipoma include cosmetic concerns, neural impairment, pain, and functional limitations. Other indications for removal of lipomas include enlargement, irregular features (induration), diameter (> 5 cm), histology showing atypia with suspected sarcoma (invasion and involvement of the deep fascia). The present case report presents a 85-year-old male patient with a large tumor in the left breast, with a soft fatty consistency and not adhered to deep planes, who underwent surgery for complete removal.

KEYWORDS: BREAST; LIPOMA; BENIGN NEOPLASM

INTRODUCTION

Lipomas are benign neoplasms of the adipose tissue. When they have vascular components, they are called angiolipoma and chondrolipoma when the composition is cartilage tissue[1]. They present as single or multiple nodules, uni or bilateral, with a soft consistency and well-defined limits[2]. On ultrasound examination, they are hyperechoic, but mammography may not detect fat nodules. Needle puncture is not required.

Fibroadenolipoma is a well-circumscribed lesion, formed by normal lobules and ducts, separated by adipose and fibrous tissue. It is usually asymptomatic, however, it can reach large volumes[4]. On mammography, the hamartoma, which is an ectopy of mature tissue, appears as a well-delimited nodule of mixed density surrounded by a transparent halo. On ultrasonography, it can be hypoechoic or heterogeneous with hyperechoic areas [5,6].

Lipomas have a slow evolution and surgery is usually unnecessary, being indicated in cases of giant tumors[7].

CASE REPORT

MPN, 85 years old, male, with large volume left breast tumor located in the retropectoral region. On physical examination, a tumor in the topography of the left breast, measuring 15 cm in diameter, painless, with a soft and fatty consistency and not adhering to the deep planes (Figure 1). Ultrasonography was performed and a large lipomatous tumor was found in the left breast and located in the retropectoral region. Surgery was performed with complete removal of the lesion with an incision in the inframammary fold (Figures 2 – 4).

Figura 1: Paciente com lipoma mamário retropeitoral da mama esquerda.

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Figura 2: Remoção cirúrgica do lipoma de mama esquerda com incisão no sulco inframamário.

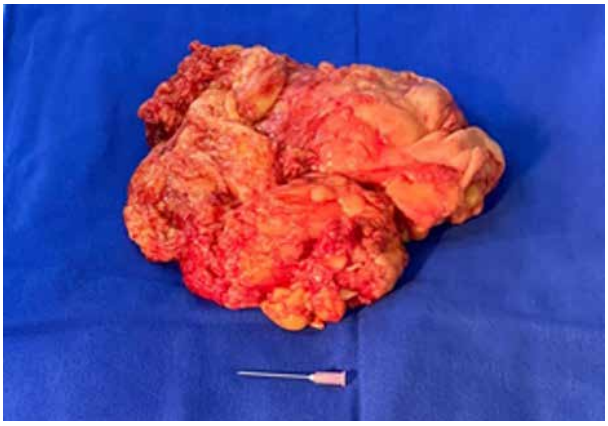

Foto 3: Aspecto macroscópico do lipoma mamário gigante.

Foto 4: Aspecto pós-cirúrgico (Incisão no sulco inframamário esquerdo).

DISCUSSION

The present report shows a case of a giant lipoma located in the left retropectoral breast region. The tumor was surgically removed due to its large dimensions. However, the literature reports that, in cases that present small lipomas, medical management is expectant, and surgery should be selectively indicated in cases of large tumors that are aesthetically unfavorable or that cause large asymmetries with painful symptoms [4,6].

CONCLUSION

The present report presents a case of giant mammary lipoma located in the retropectoral region of the left breast. Lipomas are asymptomatic benign lesions with slow evolution, and surgery is indicated in cases of giant tumors that present painful, compressive symptoms and aesthetic deformity.

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CASE REPORT

CASE REPORT OF LARVA MIGRANS IN A QUILOMBOLA COMMUNITY FROM GOIÁS

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ABSTRACT

Diffuse unilateral subacute neuroretinitis (DUSN) is a posterior unilateral uveitis characterized for the presence of a nematode in the subretinal space. It affects young and healthy individuals and it is divided into early and late according to the clinical manifestations. The main treatment is the laser photocoagulation if the worm is identified or drug treatment with specific anthelmintics in the cases with no worm identified or even identified, but with the nematode near the macula. The aim of this article is to report the case of a male patient from a vulnerable region with progressive unilateral visual loss in whom was detected the presence of a nematode in the perifoveal subretinal space associated with retinal degenerative and inflammatory changes compatible with the hypothesis of diffuse unilateral subacute neuroretinitis. Drug treatment with Albendazole was chosen for a period of thirty days due to localization of the worm in the macular area. After treatment, the patient improved the visual acuity in a significant way, beyond the migration and death of the worm in the retinal temporal periphery.

KEYWORDS: DIFFUSE SUBACUTE UNILATERAL NEURORETINITIS, UVEITIS, OCULAR INFLAMMATION, RETINITIS, ALBENDAZOLE, LASER PHOTOCOAGULATION, EARLY TREATMENT

INTRODUCTION

Diffuse unilateral subacute neuroretinitis (DUSN) was first described in 1978 by Gass.[1] It is a form of posterior uveitis caused by the presence of a mobile larva in the subretinal space, responsible for producing a copious inflammatory process associated with retinal degeneration.[2,3]

Several species of nematodes have been responsible for the etiology of this infectious condition, depending on socioeconomic, geographic and cultural conditions.[1,4]

This infectious condition usually affects younger age groups, without previous comorbidities, and disease manifestations vary according to the identified clinical stage.[5,6]

The diagnosis can be made by identifying the larva in the subretinal space (only possible in about 40% of cases) or presumably from the clinical picture, in cases where it was not possible to identify the nematode.[5]

Once the nematode is identified in places far from the macular region, it is possible to perform laser photocoagulation to destroy the larva. If the worm is not visualized, pharmacological treatment has become a great therapeutic option.[2]

Thus, DUSN is configured as a challenging ophthalmological condition, as well as a significant public health problem that requires a high degree of clinical suspicion for early diagnosis and treatment, aiming to prevent visual impairment and blindness in economically active young patients. [4,5]

CASE REPORT

GFG, male, 27 years old, healthy, from a Kalunga Quilombola community in Cavalcante, Goiás, came for ophthalmologic evaluation in June 2021 complaining of unilateral progressive visual loss in the right eye, associated with mild headache and ipsilateral scotomas . The patient did not report any personal and family pathological history. As for the lifestyle habits, its origins in a place with poor basic sanitation (Figure 1) and its role as a kindergarten teacher in the community are highlighted.

On physical examination, the patient had a corrected visual acuity of 0.2 in the right eye and 1.0 in the left eye. Anterior segment without changes on biomicroscopy. Preserved pupillary reflexes and extrinsic ocular motility, in addition to bilateral intraocular pressure within the normal range.

Retinal mapping showed a foveomacular pallor in the right eye and a retina with no alterations till the ora serrata

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in the left eye. Therefore, additional tests were requested for better diagnostic elucidation.

In simple retinography, an increase in pallor of the temporal retina and optic disc was noted (Figure 2). Fluorescein angiography showed a vascular attenuation with thinning of the retinal pigment epithelium (RPE) (Figure 3). Finally, on Optical Coherence Tomography (OCT) a thinning of the neurosensory retina (NSR) was visualized (Figure 4). All these changes were seen only in the right eye.

In the period between the exams and the patient's follow-up, an increase in macular pallor in the temporal region of the right eye was noticed, as well as a worsening of visual acuity in one line of sight. Therefore, a new OCT was requested and a new retinal mapping was performed in order to better elucidate the condition.

With a more accurate analysis of the new exams and association with the patient's clinical history, a thinning of the NSR with foveolar involvement was noticed, in progression, when compared to the previous OCT of the right eye, better seen through pachymetry maps (Figures 5 and 6). A U-shaped larva was also identified in the perifoveal region of the right eye, thus establishing the diagnosis of DUSN.

Due to the location of the nematode in the macular area, it was decided to start treatment with albendazole orally at a dose of 400 mg per day, for 30 days, instead of laser photocoagulation and guided follow-up during this period.

After the period established for the treatment, the patient presented improvement of 4 lines of visual acuity in the right eye and new complementary exams were carried out, which showed migration of the larva to the subretinal temporal periphery and its subsequent death. Thus, the patient remains under clinical follow-up under expectant management.

The team responsible for the diagnosis and follow-up of the patient carried out a visit to the community for an active search with an evaluation of the residents close to the index case, and no other similar cases were found (Figure 7). Contact was also made with the City Council in order to develop partnerships and new social actions for prevention and early diagnosis.

DISCUSSION

The aforementioned report describes a case of DUSN in which the late identification of the larva in the perifoveal subretinal region was possible in a patient with a clinical picture compatible with neuroretinitis. The literature mentions the difficult identification of the nematode in the vast majority of cases, which culminates in diagnostic delay and potential loss of visual acuity.[5] Therefore, the case presented becomes relevant within the scientific community and highlights the need for a high degree of clinical suspicion in the first contact with a healthy patient, but coming from a highly vulnerable location and who presents with a complaint of progressive unilateral visual loss.

DUSN is an inflammatory and infectious condition that can be etiologically related to several species of nematodes, such as Toxocara canis, Baylisascaris procyonis and Ancylostoma caninum. Among them, Ancylostoma caninum is a common cause of parasitic infection in dogs in South America, highlighting a possible vector in communities with poor hygiene conditions and intimate contact with such animals (Figure 6). Due to the lack of serological tests, the vast majority of cases remain without the precise identification of the etiological agent and the great help for definition comes from the socioeconomic and demographic conditions of the patient.[1,5] In the case described, the importance of questioning about the region where the index case resides, as well as the basic sanitation conditions that can allow the spread of parasitic infections, an important cause of uveitis in Brazil.

The nematode occupies the subretinal space and generates an extensive inflammatory and degenerative process resulting from the association of larval migration with the release of its toxic residues, in addition to an immune process triggered by the individual[5], involving partial loss of ganglion cells and toxic aggression to the cells retinal bipolars.[1]

The clinical manifestations are variable and make it possible to divide the disease into two stages: early and late. The early stage is defined by the presence of a central or paracentral scotoma, associated with visual loss in cases with mild to moderate vitritis, optic disc edema and whitish multifocal lesions in the external retina and choroid. The late phase is characterized by degeneration of the RPE, atrophy of the optic nerve and narrowing of the retinal vessels.[6,2]

The case reported here describes clinical manifestations compatible with the literature, as the patient presents an association of a central scotoma with unilateral visual loss, in addition to findings related to retinal involvement. Intense inflammatory and degenerative changes were not noted at the level of the external retina and choroid, but subretinal nematode migration was carefully observed, generating sensorineural retinal thinning and vascular attenuation.

Diagnosis is essential for eradicating the agent and preventing irreversible visual loss. The identification of the subretinal larva is pathognomonic for DUSN, however, due to the low index of visualization, the diagnosis can be clinical and presumably based on the symptoms reported by the patient, in addition to complementary tests that may be requested to aid in the diagnosis and follow-up on the evolution of the condition. [1]

Serologies are also part of the suggested propaedeutic arsenal, but with limited diagnostic value, being used more for the differential diagnosis.[6]

In this case, it was possible, even if late, to identify the nematode and its migration based on funduscopic findings associated with imaging exams. Thus, the report reinforces the importance of a high degree of suspicion and the proper use of diagnostic means in favor of elucidation and early treatment.

The treatment of choice is based on the destruction of the larva through photocoagulation with an argon laser at 500 µm and duration of 0.5 seconds. However, in cases where the

larva is not identified or it is close to the macular region, the laser could be responsible for an additional injury to a prime retinal site. Therefore, pharmacological treatment becomes a viable option and one that has been gaining space.[3,1]

Several drug treatments with anthelmintics have been proposed and used, but Albendazol has become a safe alternative, in addition to being effective and with greater capacity to penetrate the blood-retinal barrier. Regarding the doses and duration of treatment, several regimens are suggested in the literature, however this report used the daily use of 400 mg of Albendazol for a period of 30 days, similar to that used in cases of neurocysticercosis, due to the pathogenic and clinical similarity of both conditions.[1]

At the end of the report, the evident migration to the temporal periphery and death of the subretinal nematode with the instituted treatment is observed, strengthening the relevance of drug therapy in cases of diffuse unilateral subacute neuroretinitis with the larva located in the retinal macular region.

Figure 1: Image showing the precarious conditions of the place and the presence of not dewormed dogs in the community

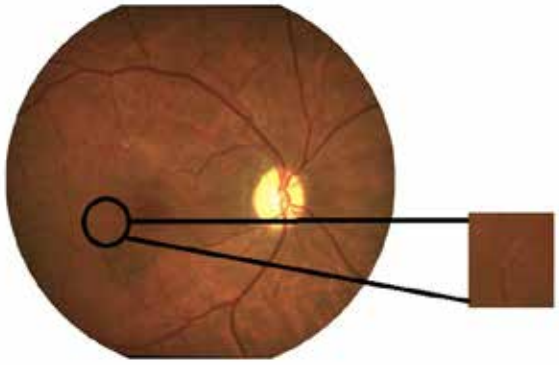

Figure 2: Simple photograph of the right eye showing pale temporal retina and optic disc. Enlarged image demonstrates retinal larva migrans.

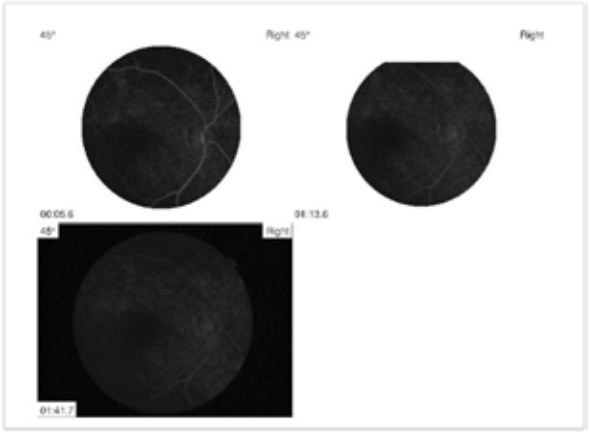

Figure 3: Right eye fluorescein angiography showing RPE thinning and vascular attenuation.

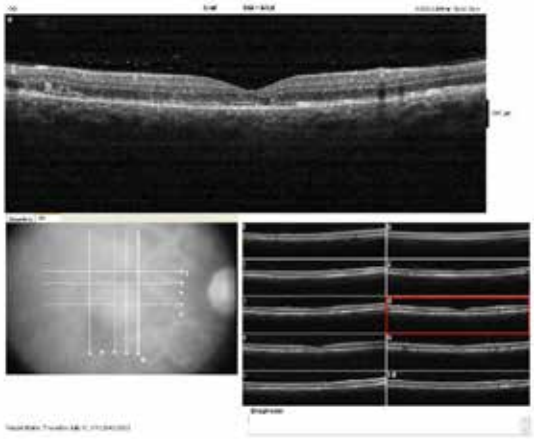

Figure 4: OCT of the right eye with thinning of the sensorineural retina and presence of subretinal larva migrans. Detail shows the specific location of the nematode (red circle).

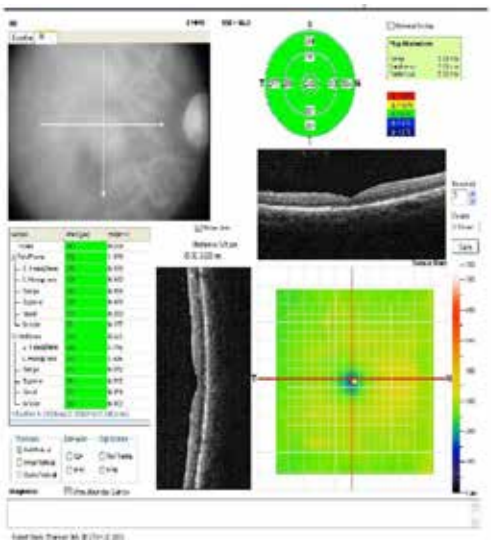

Figure 5: OCT pachymetric map of the right eye showing initial thinning of the sensorineural retina.

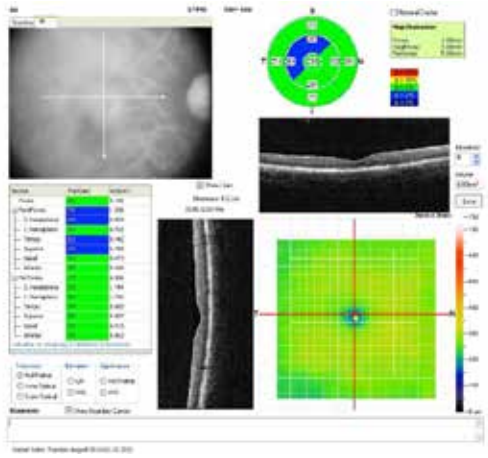

Figure 6: OCT pachymetry map of the right eye showing thinning of the sensorineural retina with progressive foveolar involvement.

Image 7: Team performing ophthalmological screening in community residents.

CONCLUSION

DUSN is the main cause of infective posterior uveitis after toxoplasmosis and, therefore, the aforementioned report reiterates the importance of early diagnosis and treatment, which considerably increase the chances of improving visual acuity.

Given this and the complexity of the diagnosis, it is imperative to have a high degree of clinical suspicion in those healthy individuals in whom the larva has not been identified, but present insidious unilateral loss of visual acuity associated with retinal involvement such as vitritis and papillitis or late findings such as optic atrophy and arteriolar narrowing.

It is worth emphasizing the importance of adequate basic sanitation and hygiene measures, as well as deworming host animals at risk of transmission, to prevent DUSN among other parasitic diseases.

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CASE REPORT

ROLE OF THE TRANSESOPHAGEAL ECHOCARDIOGRAM IN THE DIAGNOSIS OF PERIOPERATORY LEFT VENTRICULAR DYSFUNCTION AFTER MITRAL VALVE IMPLANTATION. CASE REPORT

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ABSTRACT

The mitral regurgitation (MR) is a highly prevalent valve disease worldwide and it can lead to important repercussions for the patient, with surgical mitral valve replacement being one of the main therapeutic approaches in these situations. Our case report refers to a male patient, 67 years old, alcoholic, with previous diagnoses of tricuspid regurgitation, right ventricular (RV) dysfunction and dilatation, ostium secundum interatrial communication and mitral valve disease. After presenting with dyspnea (NYHA III), orthopnea and oliguria, the patient was admitted at the intensive care unit being diagnosed with acute MR due to posterior leaflet chord rupture and pulmonary hypertension. Therefore, urgent surgical intervention with mitral bioprosthesis implantation, tricuspid valve repair and atrioseptorrhaphy was proposed. After anesthetic induction, a transesophageal echocardiogram (TEE) was performed, which showed RV volume overload, leading to suspicion of dysfunction that could hinder the removal of extracorporeal circulation (ECC). At surgery, ECC time was 90 minutes and aortic clamping time was 64 minutes. Upon discharge from ECC, TEE revealed left ventricular (LV) insufficiency, which was masked by MR that normalized the LV ejection fraction in the preoperative period. Thus, doses of inotropic and vasoactive drugs were optimized, in addition to early use of an intra-aortic balloon, resulting in an effective therapeutic approach and early hospital discharge. This highlights the importance of the TEE in defining an effective postoperative approach, which should be used whenever available in the service.

KEYWORDS: TRANSESOPHAGEAL ECHOCARDIOGRAM; MITRAL PROSTHESIS IMPLANTATION; MITRAL REGURGITATION.

INTRODUCTION

Mitral regurgitation (MR) is one of the most prevalent valvular diseases in the world, being diagnosed in more than 2 million people in the United States of America alone in the year 2000 and this number is expected to double to 2030.[1]

The mitral valve (MV) consists of 2 leaflets (anterior and posterior) positioned within a ring. It allows blood inflow from the left atrium (LA) to the left ventricle (LV) during diastole, while preventing systolic blood reflux. To perform this task, a delicate interaction between LV contraction and/or relaxation, papillary muscle contraction, annular and leaflet movement is required. Any disturbance of this interaction affects the coaptation of the systolic leaflet and can result in a regurgitation of blood from the LV to the LA.[1,2]

In the early stages of MR, the LV wall stress due to volume overload is compensated by the increase in the ejection fraction, due to the passage of blood to the LA, which occurs due to the low resistance of this cardiac chamber. If compensatory mechanisms are maintained, an evolution from the acute stage to the compensated chronic stage of MR may occur. In this compensated stage, there will be LV dilation to maintain the stress and diastolic pressure of the heart wall, causing patients to remain asymptomatic during this phase for years or even decades.[3]

However, as this chronic disease progresses, there is an alteration in the ventricular structure, assuming a spherical mass of greater weight, increasing the systolic stress on the LV wall due to greater pressure on the ventricular axis. This leads to an increase in end-diastolic pressure and, eventually, to a decreased contractile state, with reduced myofiber content and ventricular interstitial fibrosis, which can lead to heart failure (HF).[3]

In addition to the repercussions on the LV, MR can also have consequences on the right ventricle (RV) and on the systemic circulation. An example of this is pulmonary hypertension (PH), which is an important contributor to morbidity and mortality in patients with valvular heart disease. In this situation, elevated left atrial pressure causes the develop-

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ment of postcapillary PH, which worsens blood oxygenation and can lead to RV insufficiency by increasing the contractile force necessary for the ventricle to eject blood into the pulmonary capillaries, causing an overload of volume in the RV, with ventricular interstitial fibrosis and thickening of its wall, similar to the process that occurs in the LV.[4]

In view of this picture of several MR repercussions, intraoperative transesophageal echocardiography (TEE) emerges as an important guiding tool for therapeutic approaches to guide hemodynamic management more rationally and significantly influence decision-making in patients undergoing MV exchange surgery.

The aim of this study is to report a case of change in medical conduct from the use of TEE in intraoperative MV replacement surgery.

The Research Ethics Committee of the Emergency Hospital of Goiânia, linked to Plataforma Brasil, approved this study (CAAE: 08498819.80000.0033).

CASE REPORT

Male patient, 67 years old, alcoholic and with previous diagnoses of tricuspid insufficiency (TI), RV dysfunction and dilatation, ostium secundum interatrial communication and mitral valve disease. Before hospitalization, he used Selozok 25 mg.

After dyspnea on minimal exertion (NYHA III), orthopnea and oliguria, a clinical investigation followed, which led to the diagnosis of acute MR due to posterior leaflet chord rupture and consequent PH, leading to the patient's admission to the Intensive Care Unit (ICU). Therefore, urgent surgical intervention was proposed, performed on the same day after compensation of the clinical picture with mitral bioprosthesis implantation, tricuspid valve repair (DeVega suture) and atrioseptorrhaphy.

The procedure started with the performance of general anesthesia and, after anesthetic induction, the TEE probe was passed, used as an intraoperative monitor. The initial examination showed RV volume overload, leading to suspicion of dysfunction, which could make CPB withdrawal difficult. (figure 1)

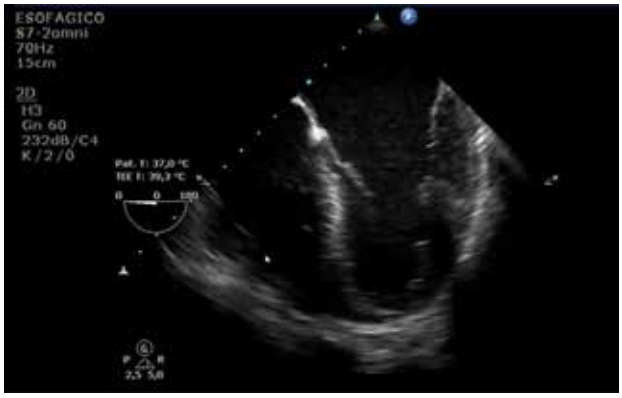

Figure 1: Transesophageal echocardiogram image before patient admission to CPB. Image reveals right ventricular (RV) volume overload. With this finding, it was expected that there would be some difficulty in leaving CPB due to RV dysfunction.

The procedure was followed by sternotomy and pericardiotomy followed by full heparinization and entry into the CPB system. To expose the MV, a right atriotomy with septostomy was performed, removing the MV with signs of significant degeneration. Afterwards, long-lasting mitral bioprosthesis No. 31 was implanted. Afterwards, tricuspid valve repair (DeVega suture) was performed, followed by atrioseptorrhaphy. Aortic clamping was released after 64 minutes and CPB time was 90 minutes. Finally, a mediastinal drain was passed, followed by sternal closure in layers. At the end of the procedure, at the end of CPB, another TEE was performed, which revealed correction of the patient's MR (figure 2), but also showed significant LV insufficiency, which was masked by the MR that normalized the ejection fraction before the surgery. (figure 3)

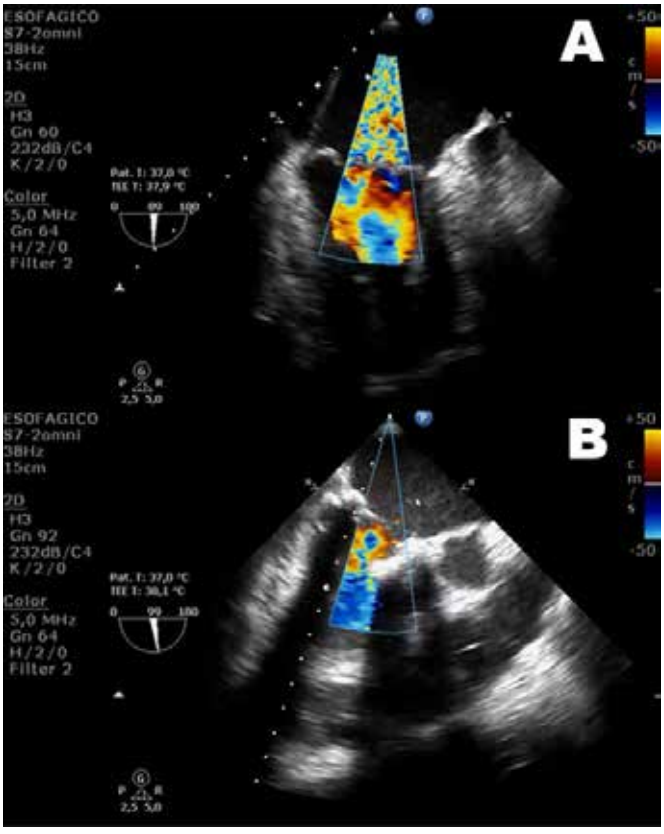

Figure 2: TEE cut-away image for mitral valve (MV) evaluation. A: Flow with mixed blue and red when MV is closed: indicating severe mitral regurgitation. B: Image after mitral prosthesis implant, with disappearance of regurgitation.

Figure 03: TEE cross-sectional image showing the left ventricle (LV). The figure shows LV dysfunction after mitral valve replacement that was previously concealed.

The patient left the operating room still intubated and on mechanical ventilation, using norepinephrine (1.13 mcg/kg/min) and dobutamine (14 mcg/kg/min). Then, vasopressin therapy was started to maintain adequate mean arterial pressure. With the need for increasing doses of noradrenaline, an early intra-aortic balloon (IAB) implant was indicated due to cardiogenic shock, in order to achieve hemodynamic stability, while still optimizing inotropic/vasoactive drugs.

The patient presented progressive clinical improvement, which led to weaning from the vasoactive drugs and withdrawal of the IAB. In 16 days, the patient was discharged from the ICU and after another 15 days he was discharged from the hospital in good general condition, hemodynamically stable and without complaints.

DISCUSSION

The latest guidelines published in 2013 and 2014 by the American Society of Echocardiography, the American Society of Cardiovascular Anesthesiologists, and the European Association for Cardiovascular Imaging state that intraoperative TEE should be performed in all open heart surgery and thoracic aortic surgery procedures, some coronary artery bypass surgery and intracardiac transcatheter procedures, such as transcatheter aortic valve implantation (TAVI), mitraclip, atrial appendage closure, atrial communication closure, ventricular assist implantation, and extracorporeal membrane oxygenation (ECMO).[5]

In general, monitoring with TEE during cardiovascular surgery is currently recommended in all patients undergoing cardiac intervention, unless there is a contraindication.[5]

In a prospective observational study in cardiac surgery patients operated from January 2009 to May 2012, in which the total number of patients studied was 1,273, TEE monitoring showed "new pre-CPB findings" in 98 patients (7,7%) and 43.8% of them modified the scheduled surgery. The incidence of "unexpected post-CPB findings" was 6.2% (79 patients) and, of these, 46.8% required reestablishment of CPB and modification of the surgery performed. In that study, unsuccessful valve repair and dysfunctional valve prostheses were the main causes of CPB re-entry.[6]

In another prospective and descriptive study carried out in patients undergoing scheduled surgery with CPB, in which TEE was performed before and after surgery, it was shown that of the 488 patients included in the study, new findings were found in 122 patients (25%), which led to a change in planned surgery in 57 (11.68%). Of the 31 patients (6.35%) in whom postoperative problems were found, 13 (2.6%) required re-entry into CPB, changing the intraoperative medical management and leading to a better outcome.[7]

In the present case report, the TEE was essential for the change of conduct, as it demonstrated that the RV insufficiency evidenced in the intraoperative TEE was actually a LV insufficiency that was masked by an MR. This finding in the post-CPB TEE changed the previously planned approach, leading to the early use of the IAB and optimizing the use of inotropic and vasoactive drugs, resulting in an effective therapeutic approach and hospital discharge in a reduced period.

CONCLUSION

The use of intraoperative TEE plays an important role in defining an effective postoperative approach and optimizing the use of resources at an early stage, which can reduce patient morbidity and mortality and the length of stay, as well as being a form of safe monitoring. In cases of MR, especially, which can mask other cardiac dysfunctions, such as LV insufficiency, intraoperative TEE should be used whenever available in the service.

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CASE REPORT

INTERMEDIATE UVEITIS AFTER COVID-19 INFECTION: A CASE REPORT

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ABSTRACT

Introduction: In the medical literature, multiple descriptions of ophthalmological manifestations have been attributed, directly or indirectly, to COVID-19. The increase in ocular surface symptoms, such as dry eye, were correlated by increasing exposure to digital life during the isolation period in pandemia. The signs of vascular involvement are well documented, such as retinal hemorrhages and also of intraocular inflammation, called uveitis. We describe a case of intermediate uveitis after COVID-19 infection. Case report: A 50-year-old man with positive Polymerase Chain Reaction (PCR) in a nasal swab for SARS-VOC-2, ten days after isolation, complained of low visual acuity and bilateral visual blurring. Vitreitis in both eyes, 2 + / 4 OD and 1 + / 4 + OE and vitreous haze were documented in simple retinography. Fifteen days after the early diagnosis and the start of treatment, the patient evolved with improved visual acuity. In the reassessment of biomicroscopy and fundoscopy, there was an improvement in the vitritis pattern. Discussion: The patient denied a medical history of chronic autoimmune and inflammatory diseases, and other etiologies were excluded. The clinical presentation, early diagnosis and satisfactory response suggest a subacute intermediate uveitis. Conclusion: We present this case of ocular involvement, days after a systemic inflammatory condition by COVID - 19, to document the extraordinary and multifaceted capacity for clinical manifestation of this virus.

KEYWORDS: UVEITIS, COVID-19, INFLAMMATION

INTRODUCTION

A new epidemic of RNA virus, with envelopes belonging to the Coronaviridae family[1], capable of causing a severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), at the end of 2019, emerged from China. Literature descriptions conceptualize "COVID-19" as an inflammatory storm, supported by cytokines, of a multisystemic character [2].

Viruses of the Coronaviridae family (CoVs) are also known to manifest in regions other than the respiratory tract, including the gastrointestinal tract and ocular tissues [1]. In 2004, near the end of the SARS-CoV crisis, the polymerase chain reaction (PCR) in tears of patients with SARS-CoV infection demonstrated the presence of the virus. The discovery of SARS-CoV in tears was the first of its kind to emphasize the need for adequate precautions to prevent potential transmission through ocular tissues and secretions[3].

In cats and murine models, it is known that viruses of the Coronaviridae family are known to cause various ocular involvement, with conjunctivitis, anterior uveitis, retinitis and optic neuritis. In SARS-CoV-2, the ocular pathology manifests itself, as expected, in different ways 3.

Recently, in the "SERPICO-19" study, 54 patients were surveyed, among the 133 exposed, with retinal alterations, where the main alterations were microvascular, especially microhemorrhages and cotton-wool exudates [4]. It is believed that this correlation between retinal manifestations and uveals and COVID-19 is related to the ACE 2 cell receptor, detected in the human retina, retinal pigment epithelium, choroid, cornea and conjunctival epithelium [1,4].

A recent survey showed that the main ocular complaints of patients with SARS-CoV-2 are dry eyes, blurred vision and foreign body sensation. It is believed that they are much more related to the more intense use of electronic devices in quarantine phases than to the infectious manifestation. However, in some patients, keratoconjunctivitis was the first clinical manifestation[5]. Some studies indicate that the presentation of SARS-CoV-2 and keratoconjunctivitis may be associated with a more severe form of the disease [3,5]. It may be present in conjunctival secretions, requiring greater attention and caution on the part of the patient and the multidisciplinary team that will manage the patient [3].

Furthermore, there are, in the literature, various descriptions of infrequent ocular presentations of COVID-19. Bettach et al., for example, postulated the first case of bi-

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lateral anterior uveitis secondary to multisystemic inflammation of SARS-CoV-2 [6]. The word uveitis was created to describe an inflammatory process in the ulvea, a region that constitutes the tunica vasculosa bulbi (iris, ciliary body and choroid), but the current term is synonymous with intraocular inflammation [7].

There are several ethologies, of autoimmune or infectious origin, that can develop the pathology, and the forms of clinical presentation are also varied, depending on the inflammatory anatomical site. However, it is known that all are mediated by the immune system, where the MHC complex genes regulate the production of cytokines and are involved in the susceptibility to the development of uveitis [7].

CASE REPORT

A 50-year-old man sought care at the Ophthalmologic Emergency Room complaining of low vision after being treated for COVID-19 infection, confirmed in a nasopharyngeal swab Polymerase Chain Reaction (PCR). He reports that he was hospitalized for the treatment of dyspnea, fever and cough with analgesics associated with systemic corticosteroids.

He complained of bilateral visual blurring after 10 days of hospital discharge, with no previous ocular pathological history, on examination: distance visual acuity of 20/50 in the right eye and 20/40 in the left eye (Snellen's table at [6] meters). Biomicroscopy examination showed an anterior chamber with mild anterior chamber reaction and fine paracentral keratic precipitates (PKS) in both eyes. The retinal mapping exam showed a clinically preserved retina up to the ora serrata, however vitritis in both eyes (BE), 2+/4 in the Right Eye (RE) and 1+/4+ in the Left Eye (LE), documented by simple fundus (figure 1).

It is worth remembering that, for the assessment of the vitreous haze scale, characteristic of this clinical presentation, it is graded from 0-4, where the main factors evaluated are the presence of blurring of the optic nerve and retinal vessels. To assess the anterior chamber, the scale for counting cells scattered in the light beam is used in biomicroscopy. However, vitreous haze, according to the American Academy of Ophthalmology (AAO), is the best way to indicate intermediate uveitis activity[7].

On fluorescein angiography (figure 1), no vascular, macular or papillary abnormalities were observed in both eyes and Optical Coherence Tomography (figure 3) showed a macula with preserved neurosensory retinal architecture and retinal pigment epithelium. A diagnostic hypothesis of subacute, bilateral, asymmetric intermediary uveitis secondary to COVID-19 was raised.

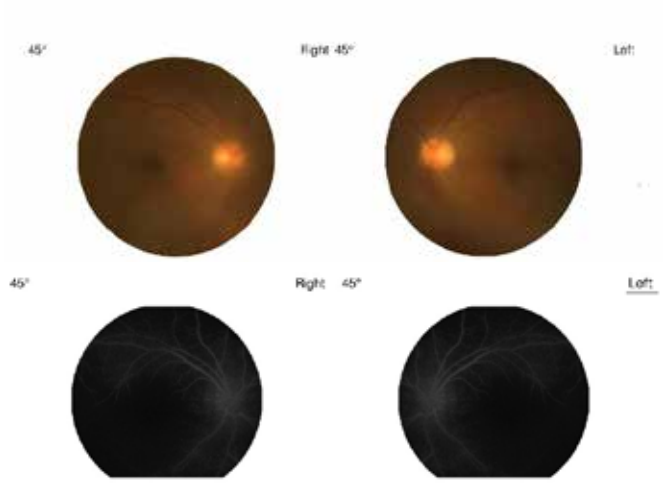

Figure 1. Color Retinography (top): Vitreous Haze 2+/4+ RE and 1+/4+ LE. Fluorescein angiography (bottom) : Intermediate phase of the examination without changes in the circulation under sodium fluorescein.

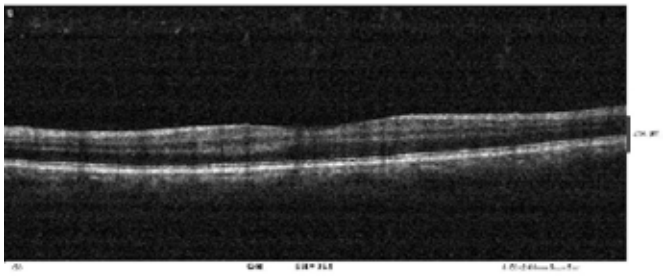

Fig 2. RE macular optical coherence tomography: Posterior optical shadow foci from the vitreous cavity.

Topical treatment was started with 1.0% prednisolone acetate eye drops, one drop, in both eyes, for 4/4hrs. The patient evolved with expressive improvement in visual acuity, and after 15 days on examination: in the right eye 20/25 and 20/20 in the left eye. In the reassessment of biomicroscopy and funduscopy, there was an important resolution of the vitritis pattern and placid anterior chamber without keratic precipitates (PKS). There was weaning from the topical treatment and progressive improvement without reactivation of the condition.

Infectious diseases such as syphilis, herpes, tuberculosis, HTLV, toxocariasis and viral hepatitis were ruled out. Cat scratch disease, sarcoidosis, Lyme disease and multiple sclerosis were also excluded. It is worth noting that the patient does not have a medical history of other ocular or chronic autoimmune, inflammatory and systemic infectious diseases.

DISCUSSION

It is known that SARS-CoV-19 is similar to a hyperferritinemic syndrome, in its main stages, with: lymphopenia, reduction in the number and activity of NK lym-

phocytes, coagulopathy and hyperferritinemia, which demonstrates the great pro-inflammatory capacity, which induces the expression of different inflammatory mediators, mainly IL-1β [1].

According to Colanfresco et al., despite the numerous etiologies that can develop the hyperferritinemic syndrome, they can converge in at least two mechanisms that cause hyperferritinemia: T lymphocyte hyperactivation and IFN-γ hyperactivity [1,2]. However, recent evidence has described the direct role of ferritin H chain in macrophage activation to increase inflammatory cytokine secretion, evolving with macrophage activation syndrome (MAS), antiphospholipid syndrome (cAPS) and septic shock [1].

This pro-inflammatory condition can be observed in several observational studies, where an increase in the number of autoimmune conditions, such as Kawasaki syndrome, was found. In children, in cities such as Paris[8], France, and Bergamo, Italy9, the SARS-CoV-2 epidemic has been associated with a high incidence of a severe form of Kawasaki disease, such as multisystem inflammatory syndrome in children (KDSS) and macrophage activation syndrome (MAS) [8,9].

In a peculiar way, the kawasaki syndrome is an acute vasculitis of medium-sized vessels, with systemic decompensation, with an immune-mediated trigger, which frequently courses with anterior uveitis [8,9]. It is believed that the correlation between intraocular inflammation and Kawasaki syndrome lies in the great inflammatory storm present in the pathology, with high levels of IL-6, C-reactive protein and procalcitonin [8,9].

There are reports of bilateral acute anterior uveitis (iridocyclitis), associated with visual blurring, associated with a multisystem inflammatory condition secondary to COVID-19, coursing with corneal edema, diffuse descemet folds and keratic precipitates (PKs) in both eyes, with good prognosis after topical and systemic therapeutic follow-up of corticosteroids described in the literature [1,3,5].

In time, intermediate uveitis is a subgroup of uveitis, where the main site of inflammation is the vitreous, peripheral retina and pars plana, epidemiologically it is usually not associated with gender or race and the involvement tends to be bilateral in 70% of cases . The most frequent initial symptom is the perception of floaters and decreased visual acuity [7].

The eye generally has a lesser inflammatory pattern compared to the presentations of anterior uveitis, with mild hyperemia and moderate anterior chamber reaction. Also part of the clinical presentation are small, white, fine keratic precipitates, usually in the lower half of the cornea. Vitritis is the disease marker, ranging from mild to severe, becoming more condensed and classically focal, such as snowballs, during progression [7].

Snowballs are peculiar vitreous infiltrates containing mononuclear leukocytes and fibrocyte-like cells, muller cells, and fibrous astrocytes. As indicated, the pathophysiology is related to a disease mediated by T cells, which, by immunotaxis initiated by an unknown antigen, leads to a picture of vasculitis and vitreous inflammation [7].

It is possible that the antigen is infectious because intermediate uveitis is seen in infectious diseases such as Lyme, syphilis, and cat-scratch fever. The disease can be autoimmune, as the pathology is also observed in non-infectious diseases, such as multiple sclerosis and sarcoidosis. Type II collagen in the vitreous may be an autoantigen in some patients [7].

HLA associations have been reported in intermediate uveitis, in which HLA-DR is the most significant, occurring in 67-72%. Promising studies correlate Human Leukocyte Antigen (HLA), which are proteins encoded in the major histocompatibility complex, for the recognition and immune defenses to COVID-19, which can condition an individual more susceptible or more resistant to the inflammatory storm typical of the acute phase of the disease, such as HLA-B*46:01 and HLA-B*15:03 [10].

In general, intermediate uveitis is usually benign, and its complications are due to chronicity. Glaucoma, cataracts, macular edema and maculopathy, secondary to intraocular inflammation, are possible complications [7]. Early diagnosis and therapeutic intervention can prevent these problems, therefore, it is of fundamental importance to discuss the clinical and inflammatory presentations, as well as the therapeutic approach of this multisystemic viral condition in this ongoing pandemic, and therefore, an important public health issue.

CONCLUSION

Regarding this COVID - 19 case, it was not possible to perform the tear swab PCR or the vitreous humor PCR, so we cannot say that the uveitis presented was caused by the coronavirus. The good response to early clinical treatment speaks in favor of self-limited subacute intermediate uveitis. After excluding other causes and possible etiologies, we considered it as a presumed diagnosis of intermediate uveitis secondary to coronavirus.

The manifestation of intermediate uveitis, in this reported case, occurred soon after treatment of the acute systemic disease by COVID-19. One hypothesis raised is the post-infectious immune-mediated presentation. Another hypothesis is that uveitis did not manifest early due to the concomitant use of systemic corticosteroids and that after its suspension, intraocular inflammation set in.

We report this case of ocular involvement, days after the systemic inflammatory condition caused by SARS-CoV-2, to document the extraordinary and multifaceted capacity of viral clinical manifestation, as a cause of low visual acuity, in an alarming pandemic scenario.

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REVIEW ARTICLE

MATERNAL DEATHS AND THEIR MAIN CAUSES

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ABSTRACT

Pregnancy is a period of innumerable changes in a woman's life, as it triggers physiological, psychological and emotional changes and adaptations, which require specialized attention and care. Although most pregnancies evolve within normal standards, maternal and perinatal morbidity and mortality rates remain high in Brazil, especially with regard to maternal complications during pregnancy, childbirth and the puerperium. Over the years, Brazil has invested in the protection of maternal death. The incentive through strategies to encourage the use of evidence-based practices was one of the main milestones for this process. However, the ideal has not yet been reached and the main obstetric complications that contribute to raising the maternal death rate are linked to infectious diseases, heart diseases or endocrinopathies (Gestational Diabetes Mellitus, Thyroid Diseases), Specific Hypertensive Gestation Syndrome (SHEG), fluid disorders Amniotic, Hemorrhages in the second half of pregnancy, among other pathologies, so there is still a need for public policies to promote the effective change of this scenario.

KEYWORDS: OBSTETRICS. WOMEN'S HEALTH. HUMANIZED CHILDBIRTH. UNIFIED HEALTH SYSTEM.

INTRODUCTION

Pregnancy is a period of countless changes in a woman's life, as it triggers physiological, psychological and emotional changes and adaptations, which require specialized attention and care. The endocrine and physiological changes in the pregnancy cycle aim at adapting the mother's body to the presence of the fetus, as a way to ensure its proper development, in which most of the time it is uneventful[1].

Although most pregnancies evolve within normal standards, maternal and perinatal morbidity and mortality rates remain high in Brazil, especially with regard to maternal complications during pregnancy, childbirth and the puerperium. On the other hand, it is known that humanized and good quality health care would prevent many women from losing their lives for reproductive reasons[2].

The World Health Organization estimates that 1,000 women worldwide die from complications of pregnancy or childbirth every day. Currently, in the country, for every 100,000 women, 70 to 150 die from some cause related to pregnancy and childbirth, and its main causes are related to complications during pregnancy, childbirth and puerperium, these being gestational hypertension, complications at work of childbirth, puerperal infection, abortion and others due to indirect obstetric causes[3].

Estimates indicate that between 25% and 35% of maternal deaths in the world can be attributed to obstetric hemorrhages and Asia and Africa are the continents with the highest number of victims. In Brazil, postpartum hemorrhage (PPH) is the leading cause of maternal death among complications unique to childbirth and puerperium, and it reaches mortality rates of 1 in 30,000 live births [4,5].

Changing the scenario of obstetric care in Brazil is a challenge and requires structural changes in care services, changing some cultural paradigms and, above all, professional qualification and effective inclusion of obstetricians and obstetric nurses in order to contribute to the reduction of maternal and neonatal morbidity and mortalityl[6].

The reduction of maternal mortality in Brazil is still a challenge for health services and constitutes a violation of women's human rights, as it is an avoidable situation in most cases. From 1968 to 2018, 38,919 maternal deaths were registered in the Mortality Information System (SIM), 67% were due to direct obstetric causes, that is, obstetric complications during pregnancy, childbirth or the puerperium.

In this sense, the aim of this study is to report the obstetric emergencies related to vaginal births through a literature review.

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HISTORY OF ASSISTANCE IN BIRTH FOR THE PROTECTION OF MATERNAL DEATH

Over the years, assistance in labor and delivery in Western societies has undergone major changes. Initially, it was configured as a household event, carried out by pregnant women and midwives[7]. This scenario has changed gradually in recent years, with the insertion of medical professionals and the hospital scenario[8]. Such transformations were associated with the ways of life that were consolidated, by values that favored technologies, economic benefit and biological science, and by techniques such as cesarean surgery and anesthesia [9].

The creation of the Network for the Humanization of Childbirth (REHUNA), in 1993, strengthened the movement in the country. Having a fundamental role in the structuring of a movement that today is called "humanization of delivery/childbirth". This movement was intended to reduce unnecessary interventions and promote care for the pregnancy/delivery/birth/breastfeeding process based on an understanding of the natural and physiological process[10].

In this construction of an adequate model, groups of scholars supported by the WHO organized themselves to systematize studies regarding new practices in childbirth care, in order to ensure the adoption of scientific evidence and ensure its widespread use in the delivery care network and birth[11]. In 1996, the WHO published recommendations based on the best scientific evidence classified into four groups: Group A, useful practices that should be encouraged; Group B, harmful or ineffective practices that must be eliminated; Group C, practices without sufficient evidence and which should be used with caution and require further research; and Group D, practices used inappropriately[10].

Despite all these proposals and actions to change the delivery care model, in Brazil, care is still marked by several unnecessary interventions compromising maternal and neonatal health. The high rates of interventions during labor and delivery without clinical indication, such as the use of oxytocin, artificial rupture of amniotic membranes, episiotomy, kristeller maneuver, high number of cesarean sections and inadequate management with a healthy newborn are routine procedures in maternity hospitals. Therefore, care is often not adequate and timely, resulting in serious complications for women, especially maternal mortality[12].

One of the strategies used by the Ministry of Health (MS) to encourage the use of evidence-based practices in the delivery and birth process was the implementation in 1999 of the Normal Childbirth Centers (CPN), aiming at a reduction in perinatal and maternal mortality, enabling humanized care and expanding access to health services[13]. In this perspective, studies that compared the care provided in an Obstetric Center (OC) and CPN showed the improvement of childbirth care in the second model, as there was a lower rate of perineal trauma and interventions such as analgesia, episiotomy and use of oxytocin, in addition to fewer transfers for operative deliveries[14].

In 2003, in Brazil, the National Humanization Policy (PNH) of care and management in the Unified Health System (SUS) was created in the daily care and management practices, with the aim of qualifying health and transforming the relationship between managers, workers and users. The PNH has been composing and articulating strategies to improve health care and work, such as welcoming with risk classification, the management collegiate, the guarantee of open visits and the right to a companion, among others[13].

As a necessary continuity of women's political achievements, in 2011 the Cegonha Network was launched as a strategy instituted within the Ministry of Health to ensure women the right to reproductive planning and humanized care during pregnancy, childbirth and puerperium, and children the right to safe birth, as well as healthy growth and development. Therefore, it is essential to change the model of care during labor and birth, with the development of actions that meet good obstetric practices[15].

The Zero Maternal Death by Hemorrhage Strategy was also implemented in Brazil, based on the attributions of the project that was conducted by the Latin American Center for Perinatology. An action of the Pan American Health Organization/World Health Organization (PAHO/WHO) and Strategy of the Ministry of Health of Brazil (MS) with actions and strategies for strengthening and qualifying assistance in a multifocal perspective of care at different levels of complexity necessary to guarantee access and completeness [4,5].

MAIN INTERCURRENCES FOR MATERNAL DEATH

Obstetric complications are a set of physical conditions caused or aggravated by the physiological adaptations of pregnancy and which, according to their degree of manifestation, can result in hospital admissions, major complications and even maternal death. These complications include infectious and contagious diseases, heart disease or endocrinopathies (Gestational Diabetes Mellitus, Thyroidopathies), Specific hypertensive disease of pregnancy (SHDP), Amniotic Fluid Disorders, Hemorrhages of the second gestational half, among other pathologies[16].

Even with advances in the obstetric area, maternal morbidity and mortality are still present. Maternal obstetric complications reflect, above all, the potential risk during prenatal care, childbirth and the puerperium. The survey of these data raises the need for actions and strategies in health units aimed at maternal and child health. Obstetric care needs to be placed not only as a public health issue, but also as a moral, ethical and economic matter [17].

Childbirth-related death should not be expected or considered normal. Motherhood is not a disease and therefore great care must be taken when comparing maternal mortality with other health problems. Maternal death is a sentinel event, an important marker of the quality of the health system, especially in relation to access, adequacy

and opportunity for care, closely related to the social vulnerability of populations. In Brazil, the discussion on avoidable maternal mortality needs to go beyond health issues and coping strategies need to evoke the reconstructive perspective of care[17].

In the country, maternal deaths from direct obstetric causes predominate. Among them, Specific hypertensive disease of pregnancy (SHDP) and Hemorrhagic Syndromes (HS) are the main causes. SHDP, together with HS and infection form the "death triad" and contribute to the increase in mortality rates [18,19,20]. Currently, maternal morbidity and mortality in Brazil remains high and incompatible with the country's gradual economic and social development. The high rates are used to assess the quality of women's health care and reflect violations of human rights, as most of these deaths could be avoided [19,21].

In 2015, there were around 303,000 maternal deaths related to pregnancy or labor, 99% of which were in developing countries and it is estimated that the majority could have been prevented. Maternal mortality in developing countries is 239 per 100,000 live births and in developed countries it is 12 per 100,000 live births [22,23].

Haemorrhage is the leading cause of maternal mortality, accounting for about 27.1% of deaths worldwide. In Portugal, the most common causes of maternal death are hemorrhagic syndromes and coagulopathies, which account for 26%. Its prevalence is approximately 6% in all births in the world, being higher in Africa 10.45%, followed by Latin America and the Caribbean 8.90% and by Oceania 7.68%, with intermediate values, then by North America 6.37% and Europe 6.38 %, and finally Asia with 2.55%, being the country with the lowest prevalence[24].

Despite advances in the obstetric area, morbidity and mortality are still present in the pregnancy-puerperal cycle and, especially, in the postpartum period. Maternal obstetric complications reflect, above all, the potential risk during prenatal care, childbirth and the puerperium. Maternal mortality is a health indicator that shows social inequalities between countries and between rich and poor, urban and rural regions. According to the WHO, the fifth millennium development goal, "Improving the Health of Pregnant Women", established by the UN in 2000, remains a great challenge. It emphasizes that less than 40% of countries have a complete civil registration system with good attribution of the cause of death, making it difficult to correctly estimate the maternal mortality rate[23].

With a scenario still far from what is recommended by the WHO, Brazil is known for the high incidence of cesarean sections, with a proportion of 45.5% of this surgery in women at habitual obstetric risk. In addition to the mode of delivery, medical interventions are excessive. Only 5.6% of mothers at usual risk and 3.2% of primiparous women give birth naturally, without any kind of intervention in the physiology of labor[3,25].

The alarming increase in the proportion of cesarean sections had a paradoxical effect, as the greater use of this technology did not reflect a decrease in maternal and neonatal morbidity and mortality and, on the contrary, had an impact on the increase in iatrogenics. This effect leveraged discussions and research that gradually spread the perception of the quality of care being related to the preservation of the physiology of childbirth[15].

FINAL CONSIDERATIONS

Over the years, Brazil has invested a lot in public policies for the protection of maternal death. Encouraging through strategies to stimulate the use of evidence-based practices was one of the main milestones for this process.

However, the ideal has not yet been reached and the main obstetric complications that contribute to increase the rate of maternal death are linked to infectious diseases, heart disease or endocrinopathies (Gestational Diabetes Mellitus, Thyroidopathies), Specific hypertensive disease of pregnancy (SHDP), Amniotic fluid disorders, Hemorrhages of the second gestational half, among other pathologies. Therefore public policies are still needed to promote effective change in this scenario.

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