

# BENIGN OVARIAN BRENNER TUMOR: A CASE REPORT

ANA LUÍZA FLEURY LUCIANO<sup>1</sup>, ANDRÉ MAROCCOLO DE SOUSA<sup>1</sup>, LILIANE CÂNDIDA DE PAULA SOUZA<sup>2</sup>,  
ROGÉRIO CÂNDIDO ROCHA<sup>2</sup>, SEBASTIÃO ALVES PINTO<sup>3,4</sup>, JUAREZ ANTÔNIO DE SOUSA<sup>4</sup>

## ABSTRACT

Brenner's tumors arise from the ovarian epithelium and are classified by the World Health organization (WHO) as benign, malignant and borderline. They are characterized by a nest of transitional cells, which resemble urothelial cells, surrounded by a fibrous stroma. They usually present themselves in patients between the fifth and seventh decade of life. Most of them are asymptomatic and discovered accidentally, through the detection of a pelvic mass on physical examination, imaging exams, laparotomy, or even in the pathological study of an oophorectomy performed for other types of tumors, with cystadenomas being more common.

**KEYWORDS: BRENNER TUMOR; BENIGN OVARIAN; TUMOR OVARIAN STROMA; HYPERESTROGENISM**

## INTRODUCTION

Brenner tumors (BT) represent about 5% of cases of benign epithelial ovarian tumors and are more common in postmenopausal women, between the fifth and seventh decades of life. Most are unilateral, and only 5-14% are bilateral. They are classified as benign Brenner tumors, or simply "Brenner Tumor", Brenner Borderline/atypical proliferative tumor, and Brenner malignant tumor. Histologically, they present as a grouping of epithelial cells of the ovarian stroma, in the form of niches, containing transitional epithelium, similar to the urothelial one <sup>1</sup>.

## CASE REPORT

Patient C.J.O., 51 years old, female, presented a history of metrorrhagia and finding of a solid tumoral mass in the ovary. She underwent an oophorectomy. Anatomopathological and immunohistochemical studies were performed, which showed a benign ovarian Brenner tumor.



Figure 1. Anatomical piece (Brenner's tumor)

1. PUC-GO
2. Maternidade Aristina Cândida, Senador Canedo
3. INGOH
4. Universidade Federal de Goiás - UFG



## ADDRESS

ANA LUÍZA FLEURY LUCIANO  
Praça Universitária, 1440  
Leste Universitário, Goiânia/GO  
E-mail: ana.fleuryluciano@gmail.com

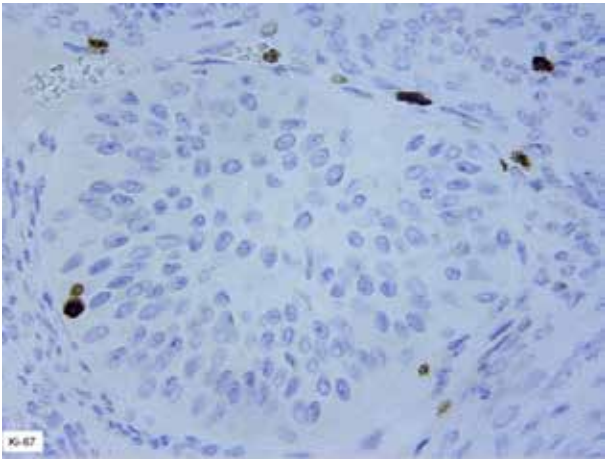


Figure 2. Histological section (Brenner's tumor)

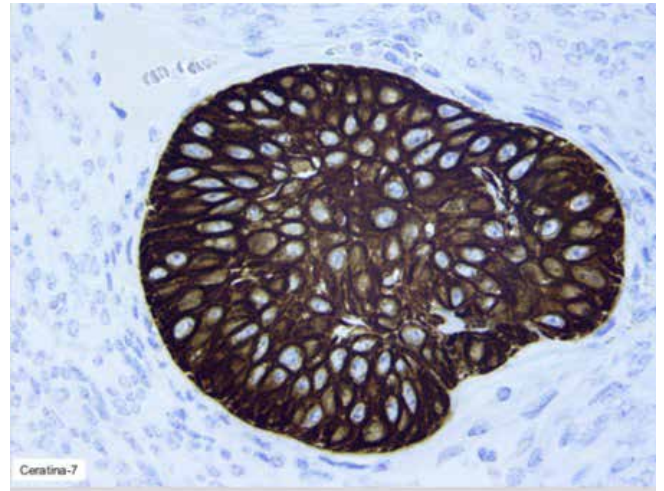


Figure 4. Histological section (Brenner's tumor)

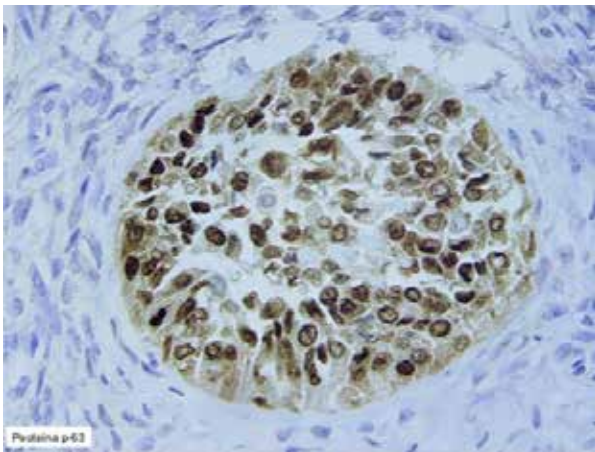


Figure 3. Histological section (cells in "coffee bean pattern")

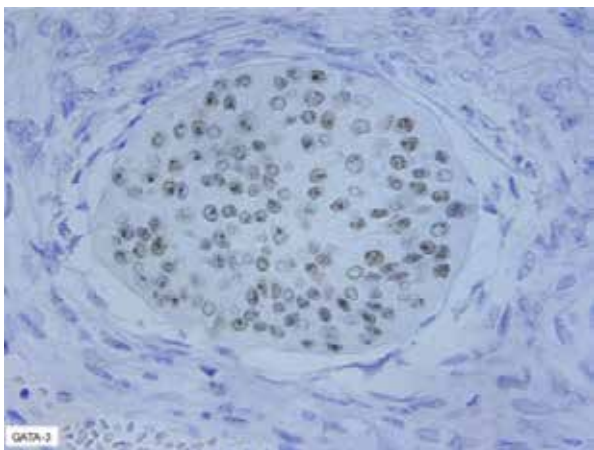


Figure 3. Histological section (Brenner's tumor)

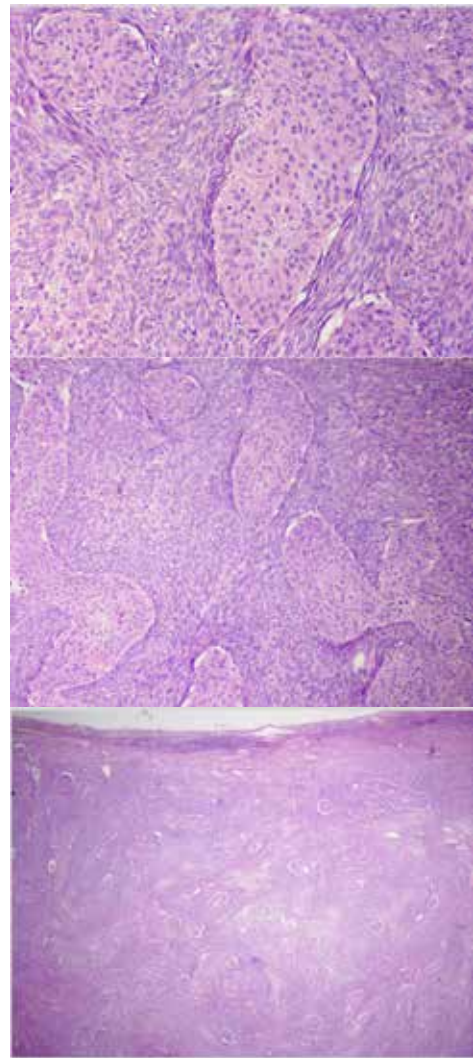


Figure 5. Microscopy section showing cluster-shaped cells in the ovarian stroma, containing transitional epithelium.

## DISCUSSION

Brenner tumors (BT) account for about 1.1 to 2.5% of ovarian tumors. They represent about 5% of cases of benign ovarian epithelial tumors and are more common in postmenopausal women, between the fifth and seventh decades of life. Most are unilateral, and only 5-14% are bilateral. The diagnosis is histopathological, being observed grouping of epithelial cells of the ovarian stroma, in the form of niches, containing transitional epithelium, similar to the urothelial epithelium<sup>1</sup>.

They are classified as benign Brenner tumors, or simply "Brenner Tumor", Brenner Borderline/atypical proliferative tumor, and Brenner malignant tumor.

Clinically, most cases are asymptomatic, being incidentally found in routine exams, such as transvaginal ultrasound, or during a laparotomy, presenting as a solid tumor mass, or solid-cystic, unilateral or bilateral, with dimensions of less than 2 cm up to large dimensions of about 20 cm<sup>2</sup>.

Occasionally, when they reach large proportions, in rare cases, they can produce clinical manifestations, such as abdominal discomfort, pelvic pain due to tumor compression, pelvic mass on abdominal palpation, ascites and pleural effusion, constituting Meigs Syndrome, or abnormal uterine bleeding, by component estrogen hormone associated with the tumor. Studies also prove the association of hyperestrogenism and BT, presenting endometrial hyperplasia and abnormal uterine bleeding in postmenopausal women, which shows the importance of an accurate investigation of these patients<sup>3</sup>.

The definitive diagnosis is histopathological, after initial investigation with ultrasound, CT/MRI and tumor markers. Ultrasound, benign BTs have predominantly solid characteristics, a smaller cystic component and poor vascularization on Doppler compared to borderline BT, while the presence of papillary projections, irregular cystic inner wall and high blood flow on ultrasound-doppler may raise suspicion of greater malignancy<sup>2</sup>.

Macroscopically, Brenner tumors are solid, fibrous, yellowish-white or grayish tumors; malignant BT may present a necrotic or hemorrhagic aspect. Microscopically, they present epithelial cells with transitional epithelium grouped in niches or round islands similar to the urothelial epithelium, surrounded by dense stroma rich in fibrous tissue. The transitional epithelial cells oriented more centrally in the niches, present clear cytoplasm and oval nucleus with prominent grooves, being characteristically known as "coffee bean pattern", with finely dispersed chromatin. In borderline BT, the cells present a certain degree of epithelial proliferation, similar to low-grade papillary transitional cell carcinoma of the bladder, but with minimal atypia and no stromal invasion, different from malignant BT<sup>3</sup>.

The surgical approach will depend on the histological type of tumor. Total hysterectomy plus bilateral salpingo-oophorectomy represents the main treatment for be-

nign and malignant BT confined to the ovaries. In terms of prognosis, Brenner tumors have an excellent prognosis, with tumor resection being a practically curative method. However, given the rarity of Brenner ovarian tumor, the gynecologist must be aware of the presence of a complex ovarian tumor, and consider this entity in the differential diagnosis<sup>4</sup>.

Brenner tumors represent 5% of benign ovarian tumors. Macroscopically, in most cases, they are less than 2 cm in size, solid, with a firm rubbery consistency and circumscribed. In the present case report, however, a tumor mass with more than 6 cm in diameter was observed. However, further studies are essential for improving knowledge and thus the treatment of this tumor.

## CONCLUSION

Brenner tumors represent 5% of benign ovarian tumors. In most cases, they are less than 2 cm in size, solid, with a firm rubbery consistency and circumscribed. In the present case report, a tumor mass with more than 6 cm in diameter was observed. They are usually incidental findings on routine examinations or exploratory laparotomies. Eventually, when they reach large proportions, in rare cases, they can produce clinical manifestations. Finally, further studies are essential for improving knowledge, early diagnosis, and individualized treatment and follow-up of this tumor.

## REFERENCES

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