

WALTHARD CELL REST OVER FALLOPIAN TUBE MIMICKING ? BRENNER TUMOR: A CURIOUS AND INTERESTING CASE REPORT

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ABSTRACT

Walthard cell rests are benign cluster of epithelial cells found in connective tissue of fallopian tubes and also seen in the mesovarium, mesosalpinx and ovarian hilus. It was proposed that Walthard cell rests may be a source of Brenner's tumor or primary urothelial cell carcinoma because of similar histogenetic origin of their cells. Here we report a case which not only during gross examination showed peculiar peritubal glistening tiny nodules but also demonstrated attention grabbing clusters of cell on histopathology, mimicking ? A tumor. A diagnosis of Walthard cell rest was made. One should always consider a differential diagnosis as Brenner's tumor (primary) or serosal implant from gynaecological, genitourinary or other tumors before making a confirmatory diagnosis of Walthard cell rest.

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INTRODUCTION

Walthard cell rest are benign nests of transitional epithelium found mostly in perfallopian tube tissue but also seen in the mesovarium, mesosalpinx and ovarian hilus. They are also called as transitional/ urothelial cell metaplasia(1). Walthard cell rest are named after a Swiss gynaecologist Max Walthard (1867-1933), who provided a comprehensive description of them in 1903 (2). Brenner tumors are proposed to arise from transitional metaplasia near the tuboperitoneal junction while embedded in the ovary as Walthard cell nests, may progress to Brenner tumors of ovary (3).

There is a morphological resemblance of cells of Walthard cells rests to Brenner clumps to the urothelium of lower urinary tract with similar immuno profile and presence of cilia on immunofluorescent staining (4). Therefore it has been proposed that Brenner tumors and Walthard cell rests signify urothelial differentiation within the female genital tract and Walthard cell rests may be a step prior to development of Brenner tumor or primary urothelial cell carcinoma (para-fallopian tube transitional cell carcinoma). The present incidental

finding of Walthard nests was therefore undertaken as a preliminary to search for Brenner tumor as an associated ovarian mass was also there on examination, with reviewing the literature.

CASE HISTORY

A 50-year-old female presented with complaint of left lower abdominal pain. Per abdominal examination showed lump and tenderness in left iliac fossa. On per vaginal examination uterus was atrophic and mass was felt in left and anterior fornix which was tense irregular and mobile. Ultrasonography, shows left adnexal cystic space occupying lesion. Patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy. Per-operatively left-sided twisted, congested ovarian cyst was present. Uterus, cervix with bilateral adnexa received consisting of cystic left ovary filled with hemorrhagic material. Serosal surface of left fallopian tube and attached mesosalpinx showed several small pearly white, glistening nodules measuring upto 2 mm (Fig.1a). Microscopically, a diagnosis of chocolate cyst left ovary with unremarkable other ovary was made. Section from peritubal nodules showed solid and cystic

nests of cells. The cystic nests were lined by flattened multilayered epithelial cells and lumen containing eosinophilic granular material. The solid nests are composed of round, oval or polygonal cells containing large vesicular nuclei and surrounded by abundant cytoplasm (Fig.1b-e). A diagnosis of Walthard cell rest was made.

DISCUSSION

Walthard's paper in 1903 gave an excellent and well-illustrated account of epithelial nests found in 80 serially-sectioned ovaries. These nests were also found on the surface of the fallopian tube and posterior aspect of the broad ligament (3). In the same year, Meyer reported similar nests on the fallopian tube, broad ligament, testis and epididymis (5). Danforth defined the Walthard nest as "a small collection of cells which may be found in the cortex or hilus of the ovary, or beneath the mucosa or within the mesosalpinx of the Fallopian tube. These rests are of two types, the solid and the cystic. In the cystic type, the central portion of the rest is occupied by a clear space which contain mucin or pseudomucin, colloid,

or mixed material"(6). The cells making up these nests were of two types : (1) densely packed cells with dark-stained, spindle-shaped nuclei and (2) round, oval or polygonal cells containing large vesicular nuclei and surrounded by abundant cytoplasm. The cystic nests were lined by flattened epithelial cells and contained eosinophilic granular material. Their walls were one to several layers thick.

Walthard cell rest may be source of Brenner tumors or primary urothelial cell carcinoma. A study showed that more than 40% of Brenner tumors had associated Walthard nests and both showed a similar morphology and immunoprofile that both are positive for urothelial differentiation marker GATA3(1,9) and negative for Mullerian (PAX8 and PAX2) and germ cell tumor markers (SALL4) (1,7). This suggests a possible link between the two lesions. However, on immunohistochemistry, cells of Walthard cell rest are positive for CK-7 and involucrin and negative for CK-20 and uroplakin, whereas Brenner tumor are positive for uroplakin (8).



Fig.1(a)

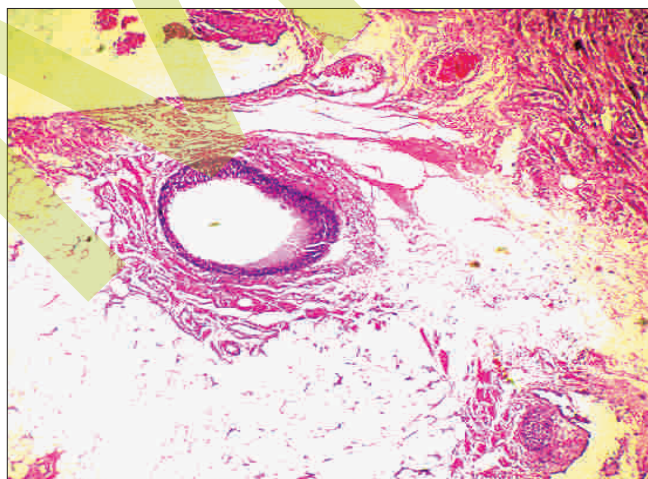


Fig.1(b) (H&E; 100x)

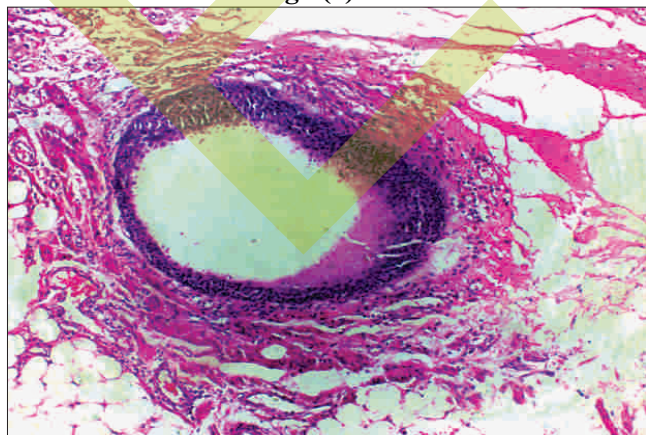


Fig.1(c) (H&E; 100x)

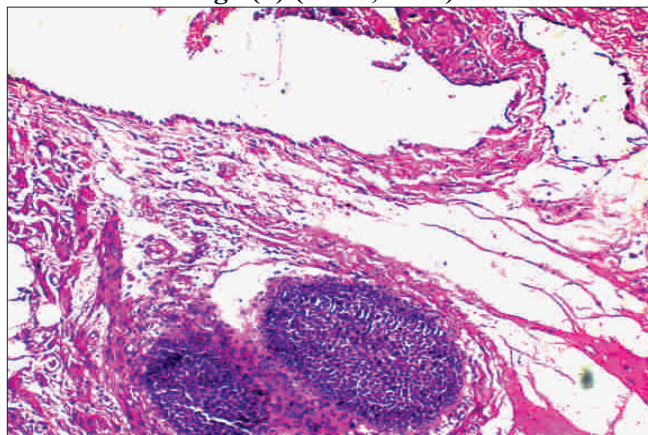


Fig.1(d) (H&E; 100x)

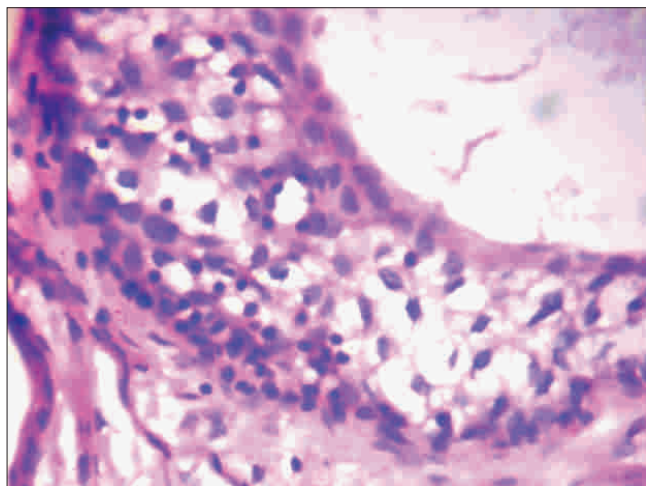


Fig.1(e) (H&E; 400x)

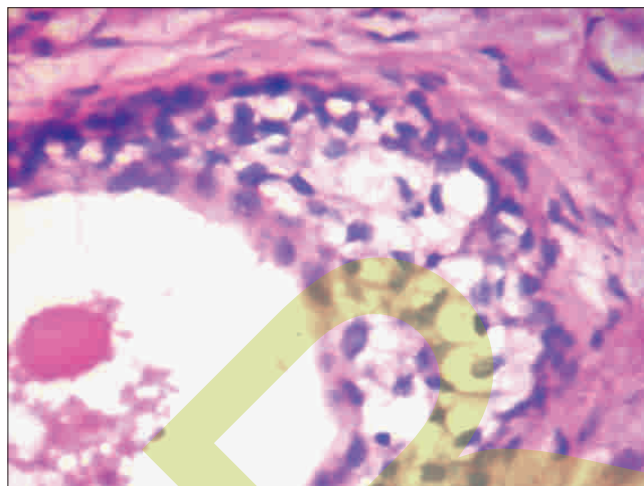


Fig.1(f) (H&E; 400x)

Figure 1(a): Gross fallopian tube surface showing pearly small nodules; Low power views : **(b):**Solid and cystic Walthard cell rest; **(c):**Cystic cell rest lined by multilayered polygonal cells with lumen containing eosinophilic material; **(d):** Photomicrograph of enlarged view of solid rest with lining epithelium; (e,f) Magnified view of lining cells of Walthard cell rest.

CONCLUSION

Walthard cell rest are often a grossly under-recognized and an incidental microscopic finding. The aforesaid facts indicate that, before making a confirmatory diagnosis of Walthard cell rest, a differential diagnosis of Brenner's tumor (primary) or serosal implant from gynaecological, genitourinary or other tumors should be considered and explored.

Conflict of interest

The authors declare that they have no competing interests.

REFERENCES

1. Andres A, Roma MD, Ramya P, Masand MD. Ovarian Brenner tumours and Walthard nests: a histologic and immunohistochemical study. *Human Pathology*. 2014;45:2417-2422.
2. Tasdemir T, Yesilyurt C, Ceyhanli KT, Celik D, Er K. Evaluation of apical filling after root canal filling by 2 different techniques. *J Can Dent Assoc [Internet]*. 2009 Apr [cited 2009 Jun 14];75(3):[about 5pp].
3. Kanbour AL, Burgers F, Salazar H. Intramural adenofibroma of the fallopian tube; light and electron microscopy. *Cancer*, 1973;31: 1433- 1439.
4. De La Fuente AA . Benign mixed mullerian tumor-adenofibroma of the fallopian tube. *Histopathol*, 1982;6: 661-666
5. Yesim G, Kacar SO (2003). Immunohistochemical profile of serous papillary cystadenofibroma of the fallopian tube: A clue of Paramesonephric origin. *App. Immunohistochem. Mol. Morphol.*, 2: 153-155.
6. D.N. Danforth Amer . *J. Obst . Gyn.* XIiii, 984. 1942
7. Roma AA, Masand RP. Ovarian Brenner tumors and Walthard nests: a histologic and immunohistochemical study. *Hum Pathol [internet]* 2014 Dec;45(12):2417-22. [cited. Epub 2014 Aug 23].
8. Riedel I, Czernobilsky B, Lifschitz-Mercer B, Roth LM, Wu XR, Sun TT, Moll R. Brenner tumors but not transitional cell carcinomas of the ovary show urothelial differentiation: immunohistochemical staining of urothelial markers, including cytokeratins and uroplakins. *Virchows Arch.* 2001; Feb;438(2):181-91.
9. Esheba GE, Longacre TA, Atkins KA, Higgins JP. Expression of the urothelial differentiation markers GATA3 and placental S100 (S100P) in female genital tract transitional cell proliferations. *Am J surg Pathol.* Mar;2009;33(3):347-53.