

PAPILLARY CARCINOMA IN STRUMA OVARIII: A CASE REPORT

Ann Niap¹, Swapna Kamal Sengupta², Denys Fortune², Ross Stillwell²
Dorevitch Pathology, Ballarat Base Hospital and Dorevitch Heidelberg, Victoria



1. Anatomical Pathology Registrar 2. Consultant Anatomical Pathologist

Introduction

Struma ovarii is a form of teratoma composed predominantly of thyroid tissue, comprising 2.7% of all ovarian teratomas¹. Malignancy may occur in 5-10% of struma ovarii²; thus accounting for 0.01% of all ovarian tumours. There is controversy as to the best management and follow-up of these cases. We describe a rare case of a 45 year-old woman with struma ovarii showing features of papillary carcinoma.

Clinical presentation

A 45 year-old parous woman presented with 12 months of pelvic pain and heavy irregular vaginal bleeding. She had no other symptoms and no clinical signs of thyroid hormone disturbance. There was no history of radiation exposure and no personal or family history of malignancy.

A pelvic ultrasound showed a small left-sided mass suggestive of a dermoid cyst. Laparoscopic left salpingo-oophorectomy was performed.

Pathology

Macroscopic findings:

The specimen was a 37x35x27mm multiloculated ovarian mass with an 18x17x12mm solid area and cystic areas containing keratinous debris. There was no Rokitansky's protuberance. The attached fallopian tube appeared normal. Peritoneal washings were not taken.

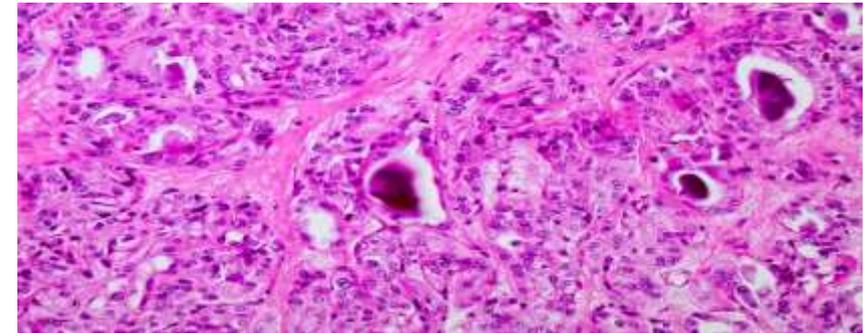
Microscopic findings:

Sections showed both cystic and solid areas. Pilo sebaceous structures and adipose tissue were seen around the cyst wall. More than 70% of the specimen was composed of thyroid tissue in solid and cystic patterns. There were papillae lined by follicular cells with optically clear, grooved, overlapping nuclei. The solid areas comprised compact follicles with the same nuclear features and also contained psammoma bodies.

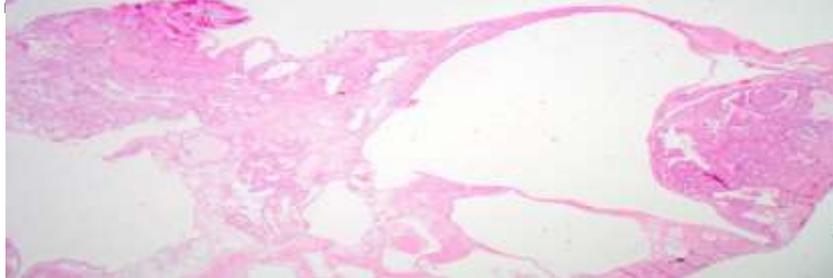
Conclusion: Struma ovarii with papillary carcinoma in classical papillary form and as a follicular variant with prominent



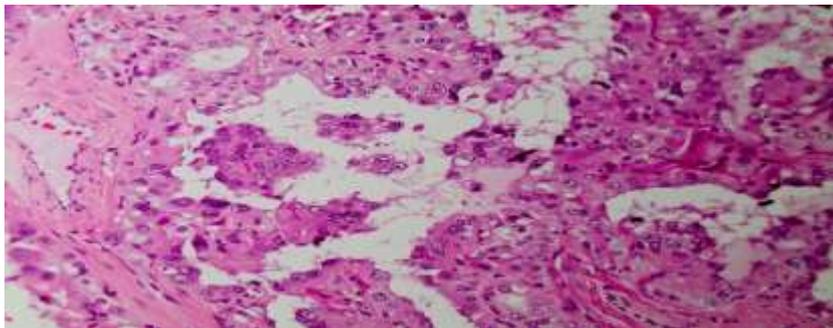
H&E (2x objective): Compact follicles with psammoma bodies



H&E (20x objective): Compact follicles with overlapping optically clear nuclei and psammoma bodies



H&E (2x objective): Cystic lesion with solid areas



H&E (20x objective): Compact follicles with small papillae and overlapping optically clear nuclei

Outcome

The patient was subsequently investigated to exclude a primary thyroid neoplasm. Thyroid function tests were normal. An ultrasound showed multiple benign thyroid nodules up to 10mm each, one of which had minor non-specific uptake on FDG PET scan. Subsequent FNA cytology of this nodule was benign. It was decided not to perform an iodine-123 nuclear scan as her native thyroid would have decreased the test's sensitivity. It was concluded that the patient had an incidental finding of papillary carcinoma in struma ovarii, independent of any thyroid pathology. She has a good prognosis in the absence of extra-ovarian spread.

Discussion

Robboy et al³ found an overall 25-year survival rate of 84% in a review of 88 cases of thyroid-type tumours in struma ovarii. It is difficult to predict the behaviour of these lesions based on histology. Tumour removal appears to be curative for most small lesions that do not show extra-ovarian spread at the time of diagnosis. Risk factors for recurrence include larger size of struma, particularly if >12cm; presence of ascites or peritoneal adhesions at diagnosis; and defects in the ovarian serosa^{1,3}. Papillary carcinomas recurred on average 4 years earlier than follicular lesions³. Mitotic rate does not aid prognostication¹. Vascular invasion was uncommon in Robboy's case series and therefore its prognostic value is unknown.

Notably, recurrence was not restricted to tumours that appeared histologically malignant. Recurrence was also observed after removal of histologically benign tumours such as follicular adenomas³. Due to the heterogeneous biological behaviour of neoplasms in struma ovarii, there is no standardised management pathway. Long-term routine clinical follow-up may be needed after initial surgery.

References

1. Kurman et al: World Health Organization Classification of Tumours of Female Reproductive Organs. Lyon, IARC Press, 2014
2. Crum P, Nucci M, Lee K: Diagnostic Gynecologic and Obstetric Pathology, Elsevier Saunders, 2011
3. Robboy et al: Malignant struma ovarii: an analysis of 88 cases, including 27 with extraovarian spread. Int J Gynecol Pathol 28:405-422, Lippincott Williams & Wilkins, Baltimore, September 2009