STRUMA OVARII

(Review of Literature and a Report of Two Cases)

by

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Struma Ovarii is a teratoid tumour of the ovary in which thyroid element is prominent, dominant or even the only element present, although thyroid tissue is quite often present in ovarian teratomas but only when it forms a greater part of the tumour should the tumour be designated as struma ovarii. Smith, in 1946, recorded that tumours consisting entirely of thyroid tissue form less than 20 per cent of the recorded examples of struma ovarii. Blackwell and coworkers (1946) noted an association of thyroid tissue in ovarian dermoid in 13 per cent of their 225 cases of dermoid cysts.

Boettlin, in 1899, for the first time described the occurrence of thyroid tissue in a benign cystic teratoma of the ovary. Vonkahlden (1895) and Gottaschalk (1899) published cases of struma ovarii. They considered the tumour to be derived from ovarian follicles. Kretschmar (1901) described the tumour as an endothelioma and thought the thyroid tissue to be metastatic from the thyroid gland.

Pick, in 1902, was the first to recognise the condition and reported a typical case of struma ovarii. He believed that tumours containing thyroid tissue were teratomas, in which the thyroid tissue proliferated and other elements were suppressed, and described it as "Teratoma Strumoides-thyroideale Ovarii". Further cases were described by Robert Meyer (1957), Gierke and Glockner (1957) and they further proved the tissue to be thyroid by demonstrating large amount of iodine (ovarian tissue, however, does contain small amount of iodine).

Bell (1905) believed that this tumour resulted from degenerative changes in a pseudomucinous cystadenoma. Quite often pseudomucinous cysts are associated with struma, this association only supports the view that these tumours are teratomas exhibiting unilateral development because thyroid and intestinal elements are of entodermal origin.

Brocq and associates (1961) reported that about 233 cases have been described in the literature up to 1959. Only 5 cases of this tumour

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have been previously reported from India (Kothari, 1950; Wahel, 1953). The purpose of this paper is to report two cases of this tumour out of 426 cases of ovarian tumours which were admitted in this hospital during the past ten years.

Case 1

J. D., 30 years, para six, presented on 25-9-1961 with, (1) irregular periods of two years' duration, (2) mass in the abdomen — 6 months, and (3) dysuria — 3 months.

Obstetrical History: six full-term deliveries, last one three years ago. Menses were previously regular, but since the last two years cycle was 2-4/15-20 days.

General and Systemic Examination: No abnormality was detected.

Vaginal examination revealed the uterus to be normal; a cystic swelling size of a tennis-ball in the right lateral fornix separate from the uterus. Swelling was not freely mobile.

Diagnosis: Provisional diagnosis was: (1) tubo-ovarian cyst; or (2) ovarian cyst.

Exploratory laparotomy was done and right-side ovarian tumour about 4″ x 3″ removed. Cut surface of tumour was mostly cystic, at places it was solid. Cystic spaces were filled with brownish colloid material.

Microscopic examination showed numerous variable sized follicles lined by flattened to low cuboidal and columnar cells containing small nuclei; areas of papillary proliferation of the epithelium were also present. The follicles were filled with brightly staining colliod material. Some of the acini were greatly distended, at places some of the acini were devoid of colloid material. Areas of calcification and hyalinisation were also present.

Postoperative period was uneventful and patient was discharged on the 12th postoperative day. Patient did not report for follow-up.

Case 2

D. K., 39 years, 8th para, presented with the complaints of; (1) something coming out per vaginam — 22 years; (2) swelling in the abdomen — 1 year. She had eight full-term deliveries. Last was 10 years ago. Menses were regular. Date of last period was 12 days prior to admission.

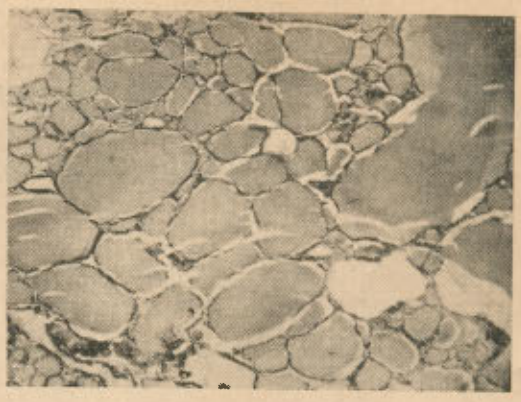

Fig. 1

Photomicrograph of the tumour (Struma Ovarii).

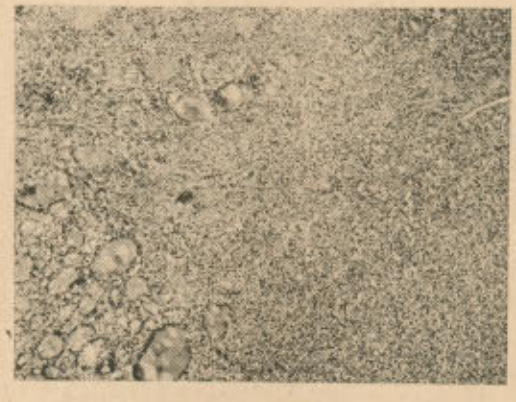

Fig. 2

Photomicrograph of the tumour (Struma Ovarii) (High power).

General and Systemic Examination revealed no abnormality.

Vaginal examination showed cervix outside the vulval outlet with retroverted normal-sized uterus. In addition to this a solid ovarian tumour of the size of a cricket ball was felt in the right fornix.

Provisional Diagnosis: solid ovarian tumour.

Operation: Exploratory laparotomy was done on 18-4-1964 and right overy was

found replaced by a solid lobulated tumour; panhysterectomy was done.

The tumour was 5″ x 4″, cut surface was variegated, with areas of haemorrhage and cyst formation, at one area solid tissue like cartilage was felt.

Microscopic examination showed large number of small sized follicles lined by cuboidal cells containing scanty colloid material. In some areas there were solid sheets and groups of cells with no attempt at follicle formation. The cells showed only slight pleomorphism, and the nuclei were at places slightly hyperchromatic, cytoplasm was rather scanty. From the histopathological report it was concluded that the tumour was struma ovarii which had undergone malignant change.

Post-operative period was uneventful except a slight rise of temperature for the first three days. Patient was discharged on the 15th day. She has been regularly followed up and is quite well with no evidence of metastases. Last follow-up was in the month of August, 1964.

Discussion

The true incidence of struma ovarii in relation to ovarian tumours is difficult to record. In our series incidence was 0.47 per cent of all ovarian tumours.

1. Age and parity: Struma ovarii has been reported in all age groups. The average age in Smith's (1946) series of 139 cases was 42 years. Our cases were 30 and 39 years old. There is no distinct relationship between parity and susceptibility to struma ovarii. Both of our cases were, however, multiparae.

2. Ascites is encountered in 1/6th of the cases and is not necessarily indicative of malignancy; and usually disappears after the removal of the tumour. Baskin and Counseller (1961) reported a case of struma ovarii associated with Meig's syndrome. Neither of our cases had ascites.

3. Physiological activity with the production of thyrotoxicosis has been recorded in about 5-6 per cent of ovarian strumas by Sailer (1943). Wodruff and Markley (1957), Klein and Emge (1961) recorded cases in which there was definite evidence of thyrotoxicosis pre-operatively and reversion to normal was noted in the post-operative period. In some reported cases, the removal of struma ovarii resulted in enlargement of thyroid gland or in the actual appearance of symptoms of hyperthyroidism. In our cases there was no evidence of hyperthyroidism.

4. Smith (1946) noted cervical goitre in 16 per cent of his 153 cases of struma ovarii. In our cases there was no associated cervical goitre.

5. Hughesdon (1955) reported one case in which he found struma ovarii and thymic tissue. Two other cases have been reported in which parathyroid tumour was associated with struma ovarii.

Vast majority of cases of struma ovarii are asymptomatic and diagnosis is made only on subjecting the tumour mass to histopathological examination. It is characteristically a benign growth, but carcinomatous change has been recorded by Rotton and Tovell (1956) and Wodruff and Markley (1957). Emge (1940) reported that about 5-6 per cent of ovarian struma produced metastatic lesions. Metastases may occur in the form of: (1) local implants; (2) regional metastases to omentum, and mesentery, and (3) blood borne metastases to distant organs. Bone metastases may some times be the

first evidence of the disease. In the cases reported there was no evidence of metastasis.

Summary

1. Two cases of sturma ovarii have been reported — one case showed malignant change.
2. There was no evidence of thyrotoxicosis in the two cases presented.
3. Literature on struma ovarii has been reviewed.

Acknowledgements

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fallopian tube which had twisted through 360° in clockwise direction. The site of torsion was the isthmus of the tube. Right salpingectomy was done. Whole of the left tube was adherent to the back of the uterus. The uterus was retroverted and normal in size. Both the ovaries were saved as they looked healthy.

Specimen: The specimen consisted of a retort-shaped tense cystic and dark red tumour about 4½" long and 2½" broad at the fimbrial end. Histopathological examination of the tumour was not done as the specimen has been preserved.

Post-operative period was uneventful.

Comments

Torsion of the fallopian tube is rare because the tube has a broad base as compared to an ovarian tumour where the pedicle is narrow and may be long. However, the commonest cause of formation of a heavy mass in connection with the tube is salpingitis which is accompanied by adhesions. Only when the mass in the tube has flimsy adhesions at the base or no adhesions to the surrounding structures, is it likely to undergo torsion. Extraneous causes of torsion of the tube are an ovarian or parovarium tumour. An extra length of the fallopian tube, laxity of the abdomen during puerperium, pre-menstrual congestion are also thought to be predisposing factors. Youseff et al., are of the opinion that a healthy tube undergoing torsion is commoner than a diseased one.

Diagnosis of torsion of the fallopian tube is usually made at laparotomy. The pre-operative diagnosis in the majority of the cases is twisted ovarian cyst. Some cases have been diagnosed as acute salpingitis, ectopic gestation, appendicitis or infection of the urinary tract. In this case the diagnosis on admission was twisted ovarian cyst, or salpingitis. As the leucocytic count was not very high, the temperature remained normal, the tumour increased in size, became tense, with tenderness increased and the pulse rate rose to 110/min. from 72/min. a diagnosis of a twisted ovarian cyst was made. Treatment of a twisted hydrosalpinx is salpingectomy. Youseff et al., recommend that the tube should be preserved if reasonably healthy, and if the colour changes on undoing the twist. They also state that if the tube is conserved, precautions should be taken to fix the tube in such a way as to prevent recurrence. Conservation of the tube may be considered in a patient who is a nullipara or a multipara without a living child and the opposite tube is badly damaged by previous inflammation. In the author's case, the patient was nearing menopause and