STRUMA OVARII IN A CASE OF PRIMARY STERILITY

(A Case Report with Review of Literature)

by

S. R. PANDE,* M.D., D.C.P., P.M.S.I.

and

V. S. RAJVANSHI,** M.D., D.C.P., M.C.Path. (Lond.)

Struma ovarii is a rare neoplasm of ovary. Histogenetically it is thought to be a benign cystic terratoma composed entirely or largely of thyroid tissue. It was reported for the first time by Boetlin (1889) who discovered "thyroid acini in a typical ovarian dermoid." Kretschmar (1901) suggested that these tumours are endotheliomas and the thyroid tissue is metastatic from the thyroid gland. Pick (1902) reported a typical case of "Terratoma Strumoides—thyroideale ovarii", and believed it to be a terratoma where the thyroid tissue had suppressed other elements.

The authors have come across only one case of struma ovarii between the period of 1963 and 1969. The rarity of the lesion has prompted us to report the same.

Case Report

Mrs. P. aged 22 years Hindu female, married six years back, was admitted in the Kamla Nehru Memorial Hospital, Allahabad, on 10th January 1966 as a case of primary sterility with cystic enlargement of the right ovary. She complained of pain and lump in the abdomen since 3 months.

Her general condition was good and there was no clinical evidence of thyrotoxicosis. Thyroid gland was not enlarged. Pulse was 80/minute and blood pressure was 110/70 mm. of Hg. Haemoglobin was 12.6 gms per cent. Per vaginal examination showed a small retroverted uterus with a cystic ovary on the right side.

Right ovarian cystectomy was performed on 13-1-1966. The left ovary was found to be normal. Post-operative period was uneventful and the patient was discharged on the 15th day after admission.

Specimen received in the department of Pathology, M. L. N. Medical College Allahabad was an ovoid nodular mass measuring 8 x 7.5 x 3 cms. in size. It was multilocular with irregular cysts of varying sizes. Cut surface showed several cystic spaces. Largest of these cysts measured 5 x 7.5 x 3 cms. There were innumerable tiny cysts in an area 1.5 x 1.5 cm. These cysts were surrounded by white fibrous capsule and were filled with shiny translucent material. Pieces were taken from this area and from the lining of the large cyst.

Histological Examination

The solid area containing minute cysts showed numerous follicles of variable sizes. These follicles were lined by flattened to low cuboidal cells having small nuclei. These were full of brightly staining pink colloid material. The histological appearance was typical of thyroid tissue.

The large cyst showed a typical appearance of pseudomucinous cystadenoma with characteristic epithelial lining. Epithelial cells were tall, with a clear refractile cytoplasm and dark staining nuclei placed close to the basement membrane. Goblet cells were present in between.

*Reader in Pathology.

**Professor & Head of the Department of Pathology and Bacteriology, S. N. Medical College, Agra.

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Discussion

Struma ovarii is one of the rarest neoplasms of the ovary. Frankel and Lederer (1942) gathered 50 cases where the thyroid tissue made up the whole tumour. In two of their cases an associated goitre was also present. Emge (1940) estimated the recorded cases of struma ovarii to be 150, of which 5-6% were said to have produced thyrotoxicosis. Gunsberg and Danforth (1944) recorded 31 cases of struma ovarii, out of these, eight were accompanied by thyrotoxicosis. Smith (1946) published a series of 152 cases of which 76 (50 per cent) were associated with dermoid of the ovary, serous cystadenoma or pseudomucinous cystadenoma and the remaining 26 (20 per cent) were pure thyroid tissue tumours.

The case under review presented with a cystic ovarian tumour associated with primary sterility. There were no clinical evidences of thyrotoxicosis. The histological appearance of the tumour was characteristic of struma ovarii with coexisting pseudomucinous cystadenoma.

Two hundred and thirty three cases have been described in the literature upto 1959 (Brocq and associates, 1961). Only eight cases have been reported from India so far (Kothari and Bhende 1950, Wahal *et al* 1953, Phillips and Kaur 1965 and Tyagi *et al* 1967).

There is an age range varying from 6-74 years with four-fifths occurring in the period of active sex life (Hertig and Gore, 1961). The average age reported by Smith (1946) was 42 years. The age of the cases reported from India varies from 20 years to 64 years. The case under reference was only 22 years of age.

According to Phillips and Gurcharan Kaur (1965) there is no distinct relationship between parity and the occurrence of struma ovarii. Present case presented itself with primary sterility.

Physiological activity with the production of thyrotoxicosis has been recorded in 5 to 6 per cent of cases of ovarian strumas by Sailers (1943). Woodruff and Marklay (1957), Klein and Emge (1961) recorded cases in which there was a definite evidence of thyrotoxicosis preoperatively and reversion to normal was noted in post-operative period. The case reported by the authors showed no evidence of thyrotoxicosis.

Smith (1946) noted cervical goitre in 16 per cent of his 153 cases of struma ovarii. No such association has been observed in this case.

Vast majority of cases of struma ovarii are asymptomatic and diagnosis is made on histological examination. It is characteristically a benign growth but malignant changes have been reported by Rotton and Tovell (1956) and Woodruff and Marklay (1957) Emge (1940) reported that about 5 to 6 per cent of ovarian struma produced metastatic lesions.

Opinions are sharply divided as to whether the thyroid tissue of the ovary can undergo malignant transformation. Nicholson (1937) asserts that a malignant change hardly ever supervenes. Dockerty (1945), on the other hand, found a high incidence of malignant change in these tumours. Histologically the metastases appears to be benign (Wynne, *et al*, 1940). Metastasis may occur in the form of (1) local implants (2) regional metastasis on the omentum, and mesentry and (3) blood borne metastasis in distant organs. Bone metastasis may sometimes be the first evidence of disease. No metastasis were observed in the present case and there were neither any signs of malignant changes both clinically as well as histologically.

Most of the cases reported in literature were unilateral (Nicholson, 1950), only a few cases are mentioned in which both the ovaries were involved (Wahal *et al*, 1953). In these cases pure struma ovarii was present only on one side; on the other it was present in association with an established dermoid (Kafka 1921, Morgen 1924).

Histogenesis of this tumour is not free from controversy. Pick (1903) postulated a terratomatous origin. The fact that 50 per cent of cases are associated with dermoid (Sailers, 1943) lends further support to the terratomatous origin. Sailers (1943) and Dockerty (1945) explain the histogenesis of pure struma ovarii by postulating that the thyroid tissue in these tumours obliterates the other terratomatous elements. Association of struma ovarii with pseudomucinous cystadenoma or serous cystadenoma (King and Norris 1931, Lyday 1934, Sailers 1943, Smith 1946, Wahal *et al* 1953, Kothari and Bhende 1950), thymic tissue by Gofl (1940) and Hughesdon (1955), association of sweat gland and cartilage (Moench, 1929) and salivary gland and parathyroid by Heller and Spoehr (1946) conclusively prove its terratomatous origin.

Summary

1. One case of struma ovarii in a married female aged 22 years is being reported. She came with a lump in the abdomen and primary sterility for the last six years.

2. The tumour on histological examination turned out to be struma ovarii in association with pseudomucinous cystadenoma.

3. There was no evidence of thyrotoxicosis.

4. The tumour was benign.

5. The current literature on struma ovarii has been briefly reviewed.

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