# ARRHENOBLASTOMA

## (A Case Report)

BY

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*Introduction and Historical*

Virilising tumours of the ovary are well recognised, but their histogenesis is a subject of great speculation. Arrhenoblastoma of the ovary is a functioning rare ovarian neoplasm which manifests itself by changes in the secondary sex characters.

Pick in 1905 is credited with the first description of arrhenoblastoma. Schickele reported a similar ovarian tumour in 1907. In England the first case was described in 1915 by Bell, adding a description of the masculinising clinical picture. Emil Novak in 1933 reported a patient who had been treated in 1898. Various authors have reported similar cases and by 1938 Novak could find 45 reports in the literature and added six of his own. A search of the literature reveals a total number of approximately 121 cases of arrhenoblastoma of the ovary up to 1949. Mayer classified the tumour into three types: (1) Well differentiated tubular adenoma, (2) the intermediate, and (3) the sarcomatoid undifferentiated variety. He demonstrated the virilising nature of the tumour and coined the term "Arrhenoblastoma". First male hormone assay was reported in 1937 by Szathmary. The tumour is usually unilateral but bilateral occurence, in approximately 5 per cent of cases, has been reported. They are usually small and the largest recorded tumour was about 22 cm. in diameter.

Recently a case of arrhenoblastoma of the ovary was encountered in Municipal General Hospital, Sion. The interesting features of this case were bilateral nature of the neoplasm and the big size of the tumour on the right side. Because of these features the case is reported.

*Case History*

A married woman, aged 35 years, was admitted to this hospital on 23rd July, 1955, for pain and swelling of the abdomen. It was relatively of sudden onset and the swelling was increasing in size for the last four months.

**Personal History**

She was married at the age of 15 years and is staying with her husband. Her menarche was at the age of about 13 years. The periods were regular but used to be scanty. She had amenorrhoea for the last three years except for scanty bleeding, twice, four months ago. Her family history was non-contributory. Regarding her psychological and social changes she stated that she did not feel like mixing and talking to her relatives and neighbours as she was used to. Her voice had definitely changed and has now become more deep and thick than before. She also stated that her breasts had atrophied and there was a loss of her female hip contour. There was a growth of hair on her upper lip and

chin and excessive growth of hair on the legs. Clitoris also was noticed to have enlarged.

She had four full term normal deliveries and the last delivery was three years back. She was suckling her child for the last three years until the lactation suddenly stopped four months ago.

**Physical examination** revealed an average built emaciated woman of about the stated age. Her nails and conjuntivae were pale. The face showed hirsutism. The breasts were markedly atrophied. The hips were flat. The clitoris was hypertrophied. Both the legs had abundant growth of hair. Local examination of the abdomen showed generalized bulging of the lower abdomen. Pelvic examination revealed a solid mass separate from the uterus. It was firm, irregular, freely mobile, solid and nodular to feel. Fornices were full. Speculum examination showed slight erosion of the lips of the cervix and Nabothian follicles on the posterior lip. Cervix was oedematous and the perineum was torn. The hypertrophy of the clitoris was confirmed. The remaining external genitals were normal. Blood pressure was 110/80 mm. Hg. Lungs were clear and heart was normal.

The following **investigations** were carried out: Total erythrocytes were 3.9 m. per cu. mm. and Hb was 9.5 gm. per 100 ml. Total leucocytes were **10,900 and 7,300** per cu. mm. Differential count was within the normal range. Kahn test was negative. The cerebro-spinal fluid showed no abnormality. Wassermann test done on the cerebrospinal fluid was negative. The urine was normal. Faeces showed the presence of whip-worm ova. Chest-fluoroscopy was negative. Chest roentgenogram report read as follows: "There is some enlargement of lymph nodes in the left hilum. A small opacity is also seen in left mid-zone. The appearances do not suggest secondary deposits but the possibility of pulmonary tuberculosis should be considered. Roentgenogram of the lower dorsal, lumbar and sacral spine showed (1) mild degree of condensations on the right iliac bone, and (2) a small fragment of bone is seen near the antero-superior angle of the fourth lumbar vertebra. This is probably due to fracture in the past, traumatic. No other significant abnormality was detected." Estimation of the urinary 17-ketosteroids could not be done.

Four days after the admission, i.e. on 27th July, 1955, an exploratory laparotomy under spinal anesthesia was performed. On opening, a big ovarian tumour on the right side and a small one on the left were found. Panhysterectomy was performed with a suspicion of malignancy as there was some free fluid in the peritoneal cavity. There was no evidence of any primary growth of the gastro-intestinal tract. Her post-operative convalescence was uneventful for three weeks. But later she started complaining of weakness in the lower limbs and inability to walk or to stand properly. For this complaint she was transferred to the medical unit and she is being investigated and treated. Up to now, i.e. nearly a month after the operation, there is no appreciable change in the voice of the patient nor is there any reduction in the hirsutism.

**Pathologic Findings**

The specimen consisted of the uterus with cervix and the adnexa. The whole mass weighed 1585 gm. The big right ovarian **tumour** measured 19 x 15 x 9 cm. and was about 23.7 cm. in diameter. The surface was smooth and glistening, well capsulated, firm to feel and at places nodular greyish-white in colour. Portions of cut surface showed greyish-white fleshy tissue homogeneous in appearance. The **left ovary** was enlarged and the mass measured 4 x 2.5 x 1.5 cm. It was well capsulated, greyish-white, smooth and glistening in appearance. The cut surface showed similar appearance as the opposite number. There was no gross evidence of normal ovarian tissue. The right tube was enlarged and elongated, the left was normal. The uterus was of normal size and shape. The cut section showed thinned out endometrial lining.

Bits of the tumour were fixed in 10% formalin saline. Paraffin sections were stained by haemotoxylin and eosin, Masson's trichrome staining for fibrous tissue, Mayer's mucicarmine staining for mucus and frozen section staining with Sudan IV for fat were carried out.

**Histopathology**

Histologic appearance was as follows: The sections revealed several tissue patterns. Identifiable ovarian tissue could not be seen. The tumour was encapsulated by dense connective tissue capsule.

Neoplastic cells were arranged in groups separated by connective tissue strands. The cells were polyhedral, about 12-16$\mu$ in size. The cell wall was indistinct. Cytoplasm, which was seen as a faintly stained eosinophilic material, was abundant in some cells. In others it presented a somewhat granular appearance. It was felt that in some areas the cytoplasm of the neoplastic cells was vacuolated. The nucleus was vesicular in type. No marked hyperchromatism or mitotic activity could be discovered. In two or three sections attempts at formation of tubule-like structure were well seen. Some of the cells resembled Leydig cells in appearance and showed the presence of small fat globules when suitably stained. Mucicarmine stain showed that none of the cells contained any mucus. The sections of the uterus showed thinned out and atrophied endometrium.

The neoplasm appeared to be arrhenoblastoma of "Intermediate type."

*Discussion*

The case reported is a typical one as the tumour appeared relatively suddenly manifesting itself by its rapid growth, amenorrhoea, atrophy of breasts, hirsutism, change in the voice and hypertrophy of the clitoris. The largest recorded tumour in the literature was about 22 cm. in diameter, while this tumour measured 23.7 cm. In the present case a bilateral tumour was encountered which, as stated before, is rare. Histological appearances were definite for diagnosis of this as a case of arrhenoblastoma. The tumour showed half-hearted differentiation into tubules, while a major portion did exhibit this tendency. Hence it is "intermediate" in type according to the classification evolved by Mayer. On histological grounds the neoplasm appears to be benign in nature. It would be interesting to follow up the case, one for regression of masculinising signs and secondly for any appearance of metastases.

*Summary*

A case of arrhenoblastoma of the ovary is reported. Clinically it presented all the typical features of such a case. Important findings were that the tumour was bilateral and of a very large size. The tumour was successfully removed surgically. Histologically the tumour was classified as "an intermediate type of Arrhenoblastoma."

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*References*

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Fig. 1

Fig. 2

Fig. 1 & 2. Note the presence of a male type of hair growth on the face and cheeks and a definite growth of hair on the lip.

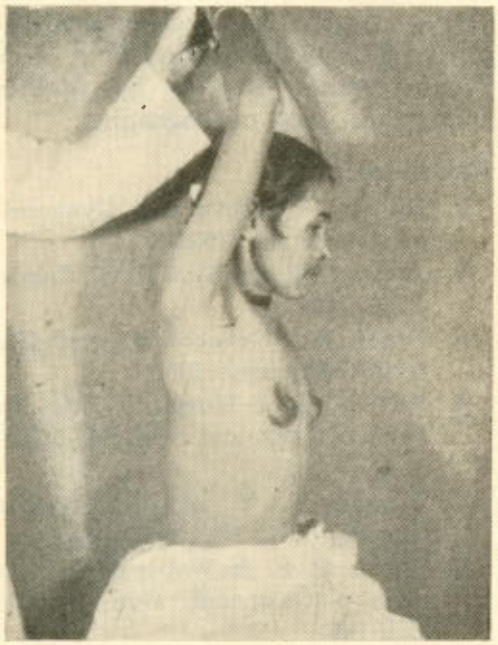

Fig. 3

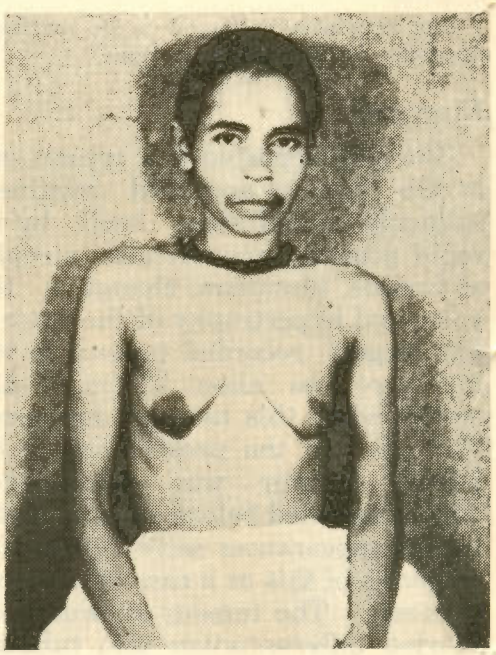

Fig. 4

Fig. 3 & 4. Lateral and front view showing well marked atrophy of the breasts.

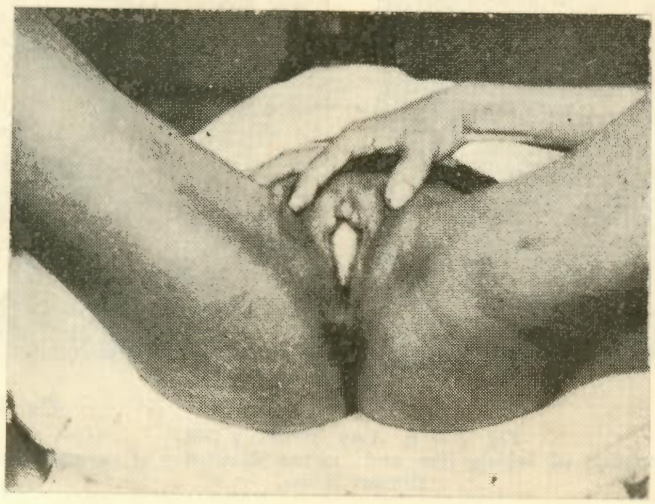

Fig. 5
Hypertrophied clitoris.

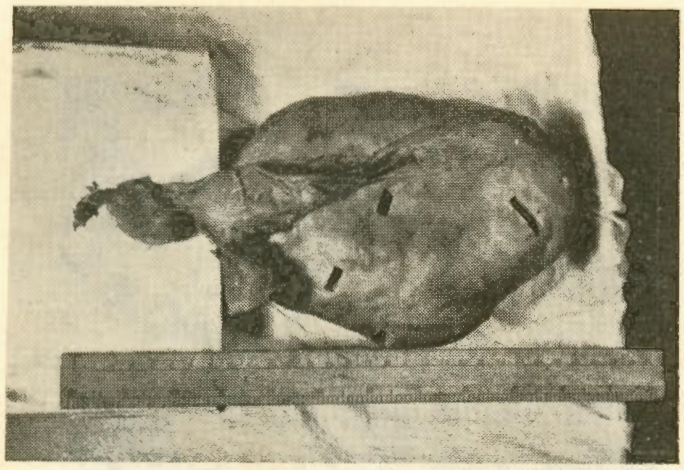

Fig. 6
The specimen with the uterus and the adnexa. The whole mass weighed 1585 gm. and measured 23.7 cm. in diameter.

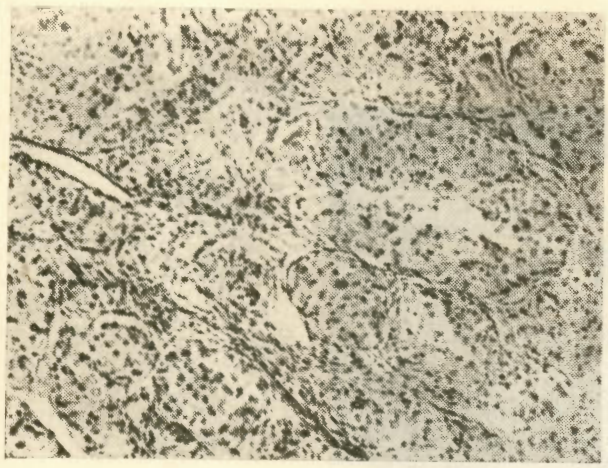

Fig. 7

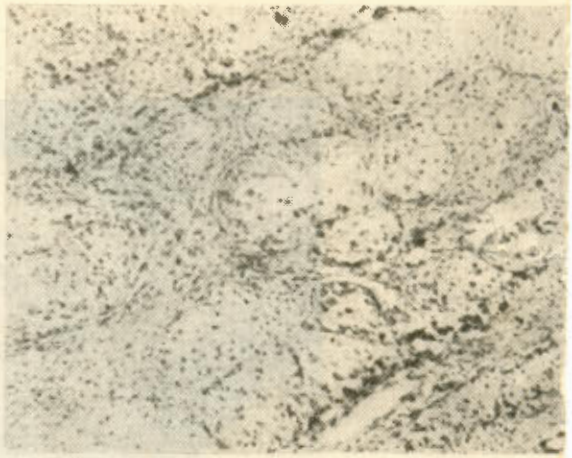

Fig. 8

Fig. 7 & 8. Low Power x 360.
Note the attempts at formation of tubule like and acinar structures of various sizes and the intervening fibrous tissue.

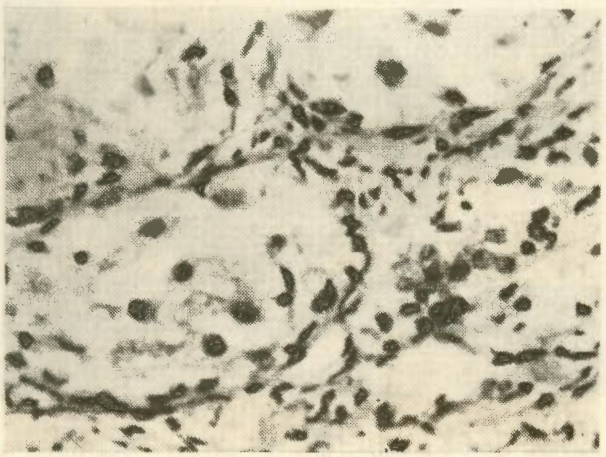

Fig. 9
High Power X 720.
One of the tubule like structure, lined by large, pale polyhedral cells with rounded vesicular nucleii.