KRUKENBERG TUMOUR OF THE OVARY

(A Case Report)

by

C. PHILLIPS,* F.R.C.O.G.

and

GURCHARAN KAUR,** M.D.

Krukenberg tumour of the ovary is a very rare and interesting ovarian new growth. In 1896 Krukenberg described it as "Fibrosarcoma mucocellular carcinomatodes" a diffuse infiltrating often bilateral solid tumour of the ovaries of myxomatous appearance consisting of mucus containing signet ring cells scattered amidst abundant oedematous ovarian-stroma.

From collected report of the ovarian tumour registry of America, the incidence seems to be about 2.8 per cent, 48 out of a total of 1700 ovarian tumours studied. Because of rarity of this condition it was thought worth while to report this case.

CASE REPORT

Patient G. aged 28 years, para one was admitted on 12-11-73 with complaints of progressive enlargement of the abdomen of 10 months' duration. Irregular bleeding per vaginum for the last 5 months which followed after an amenorrhoea of 4 months. Patient had an attack of bleeding after an amenorrhoea of 4 months which was diagnosed outside as a case of threatened abortion and was treated for that. The bleeding stopped for few days but again she had a bout. In this way she had been having irregular bleeding for the last 5 months. The bouts of bleeding were never profuse excepting once or twice. She also noticed progressive enlargement of the abdomen. She was having vomiting off and on throughout this period which was attributed by her to be due to pregnancy. Since she was not able to feel any foetal movements she reported to this hospital.

Past History: She had haematemesis once about 2 years ago and was having off and on dull sort of pain in the abdomen. Pain had no definite relation to food. She was taking medicines occasionally from the local practitioner.

Menstrual & Obstetrical History: Married 11 years ago, she had one full term normal delivery 5 years back. Menstrual cycles were regular and flow was normal prior to this.

General Physical Examination: She was moderately built, poorly nourished, anaemic.

Abdominal Examination: Abdomen was distended. On palpation firm nodular mases were palpable filling almost whole of the abdomen.

Vaginal Examination: Os closed, uterus appeared retroverted, exact size not made out. Solid masses felt through all the fornices rising up in the abdomen.

Provisional diagnosis was solid ovarian tumour.

Investigation: Hb. 9 grams, plain X-ray abdomen N.A.D.

She had 5 preoperative blood transfusions. Laparotomy was performed on 9-12-73 under spinal anaesthesia through a sub-umbilical incision which had to be extended upwards. Both the ovaries were the seat of solid tumours. Left tumour was the size of a big watermelon. Right was smaller than the left and was in the pelvis. Uterus was normal in size. Small amount of blood-stained fluid was present in the peritoneal cavity. Uterus along with the tubes and both the solid ovarian tumours were re-

*Professor, Department of Obstetrics and Gynaecology Medical College, Amritsar.

**Asstt. Professor, Department of Obstetrics and Gynaecology Medical College, Amritsar.

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moved. Tumour was sent for histopathological examination. Postoperative period was uneventful and she was discharged on y0-1-74.

Histopathological Report

Macroscopic Appearance: Tumours weighed 4 kilograms. The ovaries were converted into large solid masses measuring 30 x 110 x 10 cms. and 15 x 10 x 6 cms. The masses were irregularly lobulated. They were yellowish-white in colour with small dark areas of haemmorrhage. Consistency was firm. Uterus was 8 x 7 cm (Photograph I).

Microscopically: Report was bilateral mucoid adenocaricinoma (Krukenberg Tumour) (Photograph II)..

Follow up: Barium study of stomach, duodenum, small gut and Barium enema revealed no abnormality. She comes for regular follow up, and is feeling much better except occasional vomiting.

Discussion

The histogenesis and pathology of the Krukenberg tumour was established by Schlargenhaufer in 1902. Krukenberg believed the tumours to be ovarian in origin but later study showed that this special type of malignant neoplasm is usually secondary from the gastrointestinal tract or some other mucinous gland lesion. 70 per cent of primaries are found in the stomach, the large gut, and occasionally the breasts may also harbour the primary.

The possible routes of dissemination to ovary are, (1) direct implantation, (2) lymphatic, (3) extension by direct continuity, (4) blood borne.

The characteristic feature of these tumours are that the primary growth is often small and relatively symptomless, the large ovarian tumour giving the first or main signs of the disease. The other distinguishing feature is that histological picture of the secondary do not coincide with those of the primary.

The Krukenberg tumours are usually bilateral, though they may differ in size. Haines and Taylor state that the tumour may occasionally be unilateral.

Woodruff and Novak laid the following criteria for the diagnosis of Krukenberg tumour.

1. The tumour is in the ovary.

2. There is demonstrable evidence of intracellular mucin by the formation of signet ring cells.

3. The diffuse infiltration of the stroma justifies the general appearance of a sarcoma like picture.

Novak reported cases where primary could not be located even by most extensive search. He reported 48 cases of Krukenberg tumour of the ovary out of which 10 appeared to be primary. When it is secondary to carcinoma there is of course the supposition that one is dealing with advanced malignancy and death usually occurs within 2 years postoperatively. With primary a better prognosis is anticipated but before labelling the tumour as primary, we must exclude the absence of intestinal or other originating lesion must be excluded by prolonged follow up for 5 years.

The diagnosis of Krukenberg tumour of the ovary before surgical exploration is highly improbable. These tumours may very rarely be associated with pregnancy. These tumours are generally regarded as hormonally inactive but cases have been reported where the tumour was func-

tional. Leon *et al* reported cases where tumour was complicated with pregnancy and was associated with massive virilisation of the female foetus.

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See Figs. on Art Paper X