A CASE OF PREGNANCY CONCOMITANT WITH A RECURRENT GRANULOSA CELL CARCINOMA OF THE OVARY AFTER SURGICAL EXTIRPATION

By R. K. Sinha, M.B., B.S. (S'pore),

(Department of Obstetrics & Gynaecology, University of Singapore)

and

Donald P. C. Chan, M.B., B.S., M.R.C.O.G., F.R.C.S.E., M.M.S.A.,

(Department of Obstetrics & Gynaecology, University of Singapore, Kandang Kerbau Hospital, Singapore, and Professor Designate, University of Malaya, Kuala Lumpur)

Granulosa cell tumour of the ovary associated with pregnancy is a rare condition, and although the case under review does not quite fall into this category in that the two conditions, pregnancy and the primary ovarian tumor do not co-exist it illustrates some of the features of this tumor. Also of interest is the fact that in our case, it was a recurrence of a malignant granulosa cell tumor, only one such case having been recorded before by Tweedale D.N., et al, (1955).

CASE REPORT

Mrs. M.N. a 28 years old Indian woman, was first seen on 21.10.64 with a history of an abdominal swelling. She was a gravida 3 with 3 previous abortions each at 6 months' gestation, occuring in 1960, 1961 and 1962 respectively. A laparotomy was carried out on 27.10.64 and a large ovarian tumor arising from the right side measuring 8" × 6" × 5" with a fairly long pedicle and an intact capsule was found. The uterus and the appendages on the left side were normal. A right salpingo-oophrectomy was done. Cut surface of the tumor showed an encaphaloid appearance and histological examination revealed a granulosa cell carcinoma. Total hysterectomy and removal of the left tube and ovary were offered to the patient, but both she and her husband refused since they desired to have a child.

She was followed up and suspected to have a recurrence of the growth in the supra-pubic region in November, 1964. She became pregnant in March 1965, and an increase in the size of the recurrence was noted with adherence to the anterior abdominal wall and pubic bone. She delivered a live premature female infant on 12.1.66 (birth weight 4 lb.) per vagina.

Her post partum period was uneventful except that a further increase in the size of the recurrence was observed up to the level of the umbilicus in about one month following the delivery. She was given a course of deep X-ray therapy without much improvement, and in April 1966 she developed ascites, oedema of the right leg and severe abdominal pain which were treated with chlorambucil, analgesics and intrathecal alcohol injections with some relief. She was subsequently discharged as her husband wanted to take her back to her hometown some 200 miles away.

COMMENT

Granulosa-theca cell tumors of the ovary associated with pregnancy have been reported in 27 cases, 7 of these being predominantly theca cell tumors and 20 predominantly granulosa cell tumors. (There is invariable mixing of these 2 elements in the tumor.)

However, as mentioned before, recurrent malignant granulosa cell tumor with pregnancy is a rare combination, only one such case having been reported previously. It is interesting to note that in the case reported by Tweedale, D.N. et al. (1955), the patient, a 37 year old white married nulligravida, underwent 3 laparotomies, a right salpingo-oophrectomy being done during the first instance for a granulosa-cell tumor of the right ovary. The two latter operations were carried out for recurrences, and only at the last operation was the pregnant uterus discovered together with a recurrent nodule in the posterior uterine wall. In their case, the pregnant uterus, together with the remaining tube and ovary were removed with post operative deep X-ray therapy to the pelvis. One year after this, she

returned for follow up with no evidence of recurrence.

Our case was somewhat different in that the pregnancy was allowed to continue to delivery following which a rapid recurrence of the tumor was noted, not responding to deep X-ray therapy.

Granulosa-theca cell tumors are said to be not uncommon at the extremes of age, before puberty and after menopause, Dockerty M.B. (1945) having noted previously that recurrence and metastases in malignant granulosa cell tumors were nearly always confined to older patients. It is an interesting point that in both our case and the one reported by Tweedale D.N. et al (1955) relatively younger women in the reproductive period were involved.

Furthermore, these are said to be oestrogen secreting tumors with feminizing effects, although these were not apparent in our case. This has also been the experience of the majority of the authors reporting on the 27 cases, only 3 of which exhibited any evidence of hormonal activity around the time of pregnancy (Stout, 1946; Patton and Patton, 1948; Diddle and O'Connor, 1951). Though surprising at first sight that in 2 of these cases the effect was masculinizing, on closer examination, these 2 were found to be thecomas, there being some evidence that oestrogen production is a normal function of the theca cell (Shippel, 1955).

The interesting observation of the three recurrent abortions in 1960, 1961, and 1962 in this case has been substantiated by others like Diddle and O'Connor (1951). They had demonstrated the presence of the tumor at the time of abortion, though this association was lacking in our case. It could still be possible, however, that during the previous abortions the tumor was present though not clinically detected. It has been suggested that early abortion is a feature of granulosa cell tumors in which the high oestrogen level interferes with the proper maintainence of an intrauterine pregnancy.

Six pregnancies out of the 20 associated with granulosa cell tumors ended prematurely at various periods ranging from 28th week to 32nd weeks with infant weights varying from 3 lbs. 2 ozs. to 4 lbs. 15 ozs. (Spencer and Hollenbeck, 1946; Falls et al, 1949). In our case, a 4 lb. infant was delivered at 35 weeks. This is an interesting observation since one third of the pregnancies associated with granulosa cell tumors which reached the 28th week ended prematurely, a feature not seen in other ovarian tumors complicating pregnancy, though this has not been completely studied.

The unfortunate feature of this case is the rapid recurrence of the growth during pregnancy though a small recurrence was noted in the supra-pubic region as early as November 1964. It seems probable that a better result would have been obtained if right at the beginning a total hysterectomy and bilateral salpingo-oophrectomy had been done, or, failing that, early irradiation of the recurrence. But in this case both the patient and her husband were determined to have a child.

Though the effect of radiation treatment in these tumors is difficult to evaluate, there have been instances such as that reported by Dockerty and MacCarty (1940) of arrest of recurrence for a period of 2½ years following a dose of only 1,200 mgm. hours of radium.

REFERENCES

1. Diddle, A.W. and O'Connor, K.A. (1951): "Feminizing ovarian tumors and Pregnancy", Am. J. Obst. & Gynae., 62, 1,071.
2. Dockerty, M.B. and MacCarty, W.C. (1940): "Granulosa cell tumor of ovary with observations on radiosensitivity", Am. J. Obst. & Gynae., 39, 147.
3. Dockerty, M.B. (1945): "Ovarian neoplasms; collective review of recent literature", Internat. Alstr. Surg., 81, 179.
4. Falls, F.H.; Raggins, A.B. and Goldenberg, M. (1949): "Clinical and pathological studies of feminizing tumors of ovary", Am. J. Obst. & Gynae., 5, 1,107.
5. Patton, C.L. and Patton, R.J. (1948): "Ovarian thecoma; case reports with contrasting symptomatology", Illinois M.J., 94, 184.
6. Shippel, S.J. (1955): "Ovarian theca cell; hyperthecosis syndrome", Obst. & Gynae. Brit. Emp., 62, 321.
7. Spencer, J.A. and Hollenbeck, Z.J. (1946): "Granulosa cell tumor with presentation of five cases one with associated seven months pregnancy", Am. J. Obst. & Gynae., 54, 281.
8. Stout, A.P. (1946): "Thecal cell tumor of ovary with masculinization in pregnant women", Texas J. Med., 41, 571.
9. Tweedale, D.N.; Dockerty, M.B.; Pratt, H.D.; and Hranilovich, G.T.: "Pregnancy with a recurrent granulosa cell tumor; report of case and review of literature on granulosa cell tumors complicating pregnancy", Am. J. Obst. & Gynae., 70, 1039.