SCAR ENDOMETRIOSIS FOLLOWING ABDOMINAL HYSTEROTOMY WITH TUBAL LIGATION

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Scar endometriosis is rarely found in gynaecological practice. But massive abdominal hysterotomy with tubal ligation as a procedure of National Family Welfare Programme seems to have increased the incidence of scar endometriosis. It has been found in the literature that operations most likely followed by the condition are classical Caesarean section, myomectomy, hysterotomy, ventrofixation, removal of pelvic endometriosis and operations involving section of fallopian tubes (Jeffcoate, 1962). It has also been known to develop after the removal of an ovarian tumour and appendicectomy.

Eight cases which are being presented in this paper developed scar endometriosis after abdominal hysterotomy with tubal ligation. During the period from March 1975 to February 1977 1,860 cases of abdominal hysterotomy with tubal ligations were performed in S.S.K.M. Hospital, Calcutta, out of which 1,371 cases were followed up in the Family Welfare Clinic. Two out of 8 cases had undergone operation in some other hospital. None of the interval ligation during follow-up showed any clinical evidence of scar endometriosis.

The age group of the patients was from 27 years to 35 years. Parity varied from P_3 to P_5. The duration of pregnancy at which hysterotomy was performed was from 14 to 20 weeks (Table I).

TABLE I

Age, Parity and Duration of Pregnancy

Case No.	Age (in years)	Parity	Duration (in weeks)
1	29	P_3+1	20
2	31	P_5+0	16
3	27	P_4+0	18
4	33	P_4+0	16
5	31	P_3+1	14
6	35	P_5+1	18
7	29	P_3+0	18
8	30	P_4+0	16

The time of occurrence of scar endometriosis after operation was between 7 months to 24 months. The scar endometriosis was observed mostly at the end of the transverse incision on the skin in 6 cases and at the lower part of longitudinal incision in 2 cases (Table II).

The main complaints of the patients were pain and tenderness over the scar and in 6 cases exacerbation of symptoms was noted at the time of menstruation.

On examination, the skin over the scar looked black in 4 cases. In all the cases

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TABLE II
Interval Between Operation and Onset of Symptoms and Site of Lesion

Case No.	Time Interval (in mths)	Site
1	14	Lower end of longitudinal abdominal scar
2	16	Left side of transverse abdominal scar
3	24	Left side of transverse abdominal scar
4	9	Right and left sides of transverse abdominal scar
5	18	Left side of the transverse abdominal scar.
6	7	More or less a diffuse swelling over a small transverse abdominal scar.
7	9	Right end (encroaching on the middle) of the transverse abdominal scar.
8	14	Lower end of the longitudinal abdominal scar.

excepting 2, there were areas with some nodular elevations. On palpation firm to hard nodular, tender swellings were felt deep in the abdominal wall in the incisional scar line. They were fixed and diffuse rather than circumscribed. Most of the nodular masses could not be freely moved and in 1 case the mass infiltrated the rectus sheath and muscle (confirmed during operation) leaving the peritoneum intact. The size of the nodules varied from ¾″ to 3″ in diameter (Table III).

On vaginal examination, none showed evidence of pelvic endometriosis excepting in one case where clinically it seemed to be pelvic endometriosis where the mobility of the uterus was little restricted with a slight thickening of left parametrium. Pouch of Doglus seemed to be little tender on deep palpation. The wide excision of scar with all the nodules were performed in all the cases. The lesions in 4 cases invaded the rectus sheath, 3 cases were superficial to rectus sheath and in the remaining 1, endometriosis invaded rectus sheath and muscle which were also excised. In no case was the peritoneum involved (Table IV).

TABLE III
Clinical Data

Pain and tenderness over scar	8 cases
Exacerbation of symptoms during menstruation	6
Nodular Elevation	6
Associated pelvic endometriosis (clinically diagnosed)	1 case

TABLE IV
Invasion of the Lesion

Superficial to rectus sheath	3 cases
Involvement of rectus sheath	4 „
Infiltration of rectus muscle	1 case

The endometriosis did not occur after its initial removal during the short period of follow-up. The clinical diagnosis of endometriosis was confirmed by histopathological examination of the excised mass after operation in all the cases (Fig. 1). The case where pelvic endometriosis was suspected was put on Inj. Depoprovera after the operation which is still being continued.

Discussion

The history and clinical findings in 8 cases under report were typical to suggest endometriosis of the scar which were confirmed by histopathological examination. All the cases under study complained of painful swelling in the scar area which corroborated the findings of Steck and Helwing (1966). The time lag between

operation and development of scar endometriosis was between 7 to 24 months in the cases reported here. But Steck and Helwing (1966) reported the average interval of occurrence of such lesion was approximately 30 months. They also showed that association of pelvic endometriosis was not common with scar endometriosis. In the present paper only 1 case showed clinical evidence of pelvic endometriosis.

The way of origin of scar endometriosis is debatable. There are various theories of the development of endometriosis in different sites. The implantation theory of Sampson (1921) explains the direct contamination of wound by endometrial implans. As it has been seen that scar endometriosis occurred after simple appendicetomy many years before and even before the onset of menstrual function [(Novak, 1974) the Serosal metaplasia theory of Ivanoff, 1898)] can not be ruled out. Theory of Halban (1925) where cell emboli from the endometrium can pass through the veins and lymphatics may cause endometriosis in some cases as in umbilical endometriosis.

The operations which most likely involved in the causation of scar endometriosis as stated previously all offer the possibility of spill of mullerian epithelium into the incisional area. This explains direct implantation of endometrial fragments at operation and this is easily understood if the uterus is opened. Steck and Helwing (1966) in their series of 56 cases of scar endometriosis found 26 following caesarean section. Novak (1974) on the other hand stated that curiously enough they rarely occur after caesarean section in which uterine cavity is directly opened. Also such lesions have been reported after many different types of operations including those in which endometrium of the uterus is not invaded. Nora *et al* (1956) also stated that endometriosis occurred in the scars of caesarean section only 1/15th as often as in the scars of other pelvic surgery. Taking all these factors into consideration both the theories of Sampson and Ivanoff should be considered in the origin of scar endometriosis.

As more scar endometriosis are being reported after abdominal hysterotomy with tubectomy, the present investigators think that the prevention of such complication should be given due consideration for better acceptance of the procedure by the mass population. The following are the suggestions put forward for its prevention.

(i) The incision over the abdomen should be well protected from contamination of decidual tissue during operation.

(ii) The mops already used during operation should not be used for mopping up during the closure of abdominal wound.

(iii) The uterus should be well covered with mops excepting the incisional line during evacuation of uterus so that the products of conception (as far as practicable) to be collected over the mop without soiling the incisional area. The spillage can be better avoided by aspirating the products of conception by suction.

(iv) Preferably the incision be made in lower uterine segment.

By all these means there may be possibility of minimising the incidence of scar endometriosis if one believes in the implantation theory.

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See Fig. on Art Paper IX