TRANSVERSE MUSCLE RETRACTING INCISION IN PELVIC SURGERY

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SUMMARY

This study presents 75 cases of pelvic surgery operated upon by Pfannenstiel's incision and 25 cases operated upon by midline vertical incision. Cases were selected in both groups on the same criterias of fitness with variable diagnosis and nearly same set of pelvic operations were done in comparable group.

Introduction

The Pfannenstiel's low transverse abdominal incision in which the skin and rectus sheath are divided transversely and the rectus muscles separated laterally is based on sound anatomic, physiologic and clinical principles, as elaborated by Moschcowitz (19616), Sloan (1927), Singleton (1947), Lee (1949), Tollefson (1950), (1954) and Willocks (1963). In this regard it is generally admitted to be superior both to the transverse muscle cutting incision devised by Maylard (1907), and to the Kustner's (1896) incision also described by Bonney (1952), in which only the skin is incised transversely.

William (1960) feels that advantages of the Pfannenstiel's incision are so great that it should be considered as a routine incision for gynaecological work and for caesarean sections.

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Good results have been shown by Vohra (1966), Mitra *et al* (1971), Biswas (1973), Sen *et al* (1974) and Ghosh *et al* (1975).

Material, Method and Observations

The present study was undertaken to evaluate the indications, technical advantages and disadvantages, and results of transverse muscle retracting incision and vertical incision in cases of pelvic surgery.

Seventy-five cases were operated upon by a transverse muscle retracting incision and 25 cases were operated by a midline vertical incision. The various criteria for selection of cases were same in both groups. A variety of operations were performed with different clinical diagnosis as shown in Tables I and II.

At the time of operation, the length of incision, time required for opening and closing the wound, thickness of abdominal fat and the exposure attained were recorded in all the cases in order to compare the two groups.

A record was maintained for the development of immediate and late post-opera-

TABLE I

Operations Performed by Transverse and Vertical Incision

Operation	Transverse incision No. of cases	Vertical incision No. of cases
1. Total hysterectomy	12	6
2. Pan hysterectomy	20	6
3. Total hysterectomy with unilateral salpingo-oophorectomy	3	3
4. Ovarian cystectomy	2	2
5. Ovariotomy	1	2
6. Myomectomy	2	1
7. Lower seg. caesarean section	35	5
Total:	75	25

TABLE II

Clinical Diagnosis of Cases in the Two Groups

Clinical diagnosis	Transverse incision No. of cases	Vertical incision No. of cases
Multiple or single fibroid	14	9
DUB	13	4
Adenomyosis	5	—
Ca. body uterus	1	1
Ovarian tumour	7	6
Full term preg. with CPD	10	—
FTP with BOH	2	—
FTP with foetal distress	3	2
FTP with prolonged labour	2	—
FTP with hypertonic inertia	4	—
FTP with placenta praevia	2	—
Postmaturity with unfavourable cervix	2	—
FTP with transverse lie	2	—
FTP with breech	3	—
Repeat LSCS	5	2
Total	75	25

tive complications like distension of abdomen, retention of urine, pulmonary, venous and miscellaneous complications. The day the patient moved out of bed and amount of sedatives and analgesics required by her were also recorded and the results of two groups were compared.

Local condition of wound was inspected on 4th post operative day, and then on 6th day removal of stitches in cases of transverse and 7th day in cases of vertical incision, and any abnormality detected was recorded. Total duration of stay in the hospital from the day of operation to the day of discharge was also noted. The patients were examined after 4-6 weeks of operation for the appearance and any abnormality of scar.

TABLE III

Time required for Opening and Closing the Abdominal Incision

Oening the abdomen					Closing the abdomen				
	Transverse		Vertical			Transverse		Vertical	
Time in mts.	No. of cases	%age	No. of cases	%age	Time in mts.	No. of cases	%age	No. of cases	%
<5'	6	8	11	44	<20	39	52	6	24
6'-10'	12	16	13	52	21'-25'	22	29.3	8	32
11'-15'	36	48	1	4					
16'-20'	18	24	—	—	26'-30'	11	14.7	6	24
21'-25'	3	4	—	—	<31'	3	4.0	5	20
	75	100	25	100		75	100	25	100

From Table III it is observed that upto 10 minutes were required for opening the abdomen in 96% cases of vertical incision as compared to only 24% cases of transverse incision. In general time required to open the abdomen by transverse incision was more as required by vertical incision, whereas a little less time was required to close the transverse wound as compared to vertical wound. As shown in Table III, 52% cases of transverse incisions were closed in less than 20 minutes, as compared to only 24% cases of vertical wound. The average time required for closing the transverse wound was 21.3 minutes and for vertical wound 27.1 minutes.

The exposure obtained at the time of operation was compared in two groups, and it was observed that exposure in cases of transverse incision was as good as with vertical incision as shown in Table IV.

The day of ambulation of patient was noted in both groups and results are shown in Table V.

TABLE IV

Exosure	Transverse incision		Vertical incision	
	No. of cases	%age	No. of cases	%age
Good	44	58.66	15	60
Adequate	29	38.67	9	36
Poor	2	2.67	1	4
Total:	75	100.0	25	100

TABLE V

Day of ambulation	Transverse incision		Vertical incision	
	No. of cases	%age	No. of cases	%age
2nd operative day	35	46.67	2	8
3rd operative day	40	53.33	10	40
4th operative day	—	—	6	24
5th operative day	—	—	5	20
6th operative day	—	—	2	8
Total:	75	100	25	100

From Table V, it is clear that nearly all the patients were out of bed on 3rd operative day with transverse incision, whereas only half of the patients with vertical incision moved out of bed till 3rd operative day. In addition it was observed that patients with transverse incision were more comfortable and required lesser amount of sedatives and analgesics in the post-operative period than the comparable group with vertical incision. Post-operative complications were recorded in two groups of cases.

1. *Distension of abdomen*: Only 8% patients with transverse incision had mild distension of abdomen post-operatively as compared to 32% cases with vertical incision. The small intestines being away from the site of transverse incision are less handled and this may be the cause for low incidence of post-operative distension of abdomen.

2. *Retention of urine*: There was no significant difference in the incidence of urinary retention in the two groups of patients.

3. *Pulmonary: Venous and miscellaneous complications*: In the present study only 1 patient with vertical incision had pneumonitis in post-operative period.

The condition of wound on 4th day and on removal of stitches on 6th (with transverse incision) and 7th (with vertical incision) day was noted as shown in Table VI and VII.

TABLE VI

Condition of wound on 4th day

	Transverse incision		Vertical incision	
	No. of cases	%age	No. of cases	%age
Healthy	65	86.67	17	68
Serous discharge	4	5.33	4	16
Purulent discharge	1	1.33	1	4
Induration	5	6.67	3	12
Total:	75	100.00	25	100

TABLE VII

Condition of Wound on Removal of Stitches

	Transverse incision		Vertical incision	
	No. of cases	%age	No. of cases	%age
Perfect union	62	82.67	15	60
Sterile serous discharge	5	6.67	2	8
Induration	4	5.33	2	8
Sterile discharging haemoatoma	—	—	1	4
Superficial gaping	3	4.00	3	12
Gaping upto sheath	1	1.35	2	8
Burst abdomen	—	—	—	—
Total:	75	100.00	25	100

Resuturing of wound was required in 4 cases (5.33%) with transverse incision and in 5 cases (20%) with vertical incision.

The wound was healthy on 4th day in 86.67% cases with transverse incision as compared with 68% cases with vertical incision as shown in Table VI. Further the evidence of infection was three times more frequent in patients operated by vertical incision.

The stitches were removed on 6th day with transverse incision and on 7th day with vertical incision. The perfect healing of wound was observed in 82.67% cases with transverse incision as compared to only 60% cases with vertical incision. Wound disruption was 4 times more frequent with vertical incision.

The postoperative stay in hospital in nearly 75% patients with transverse incision were discharged by 8th day, whereas only 12% patients with vertical incision were discharged on 8th day. 20% patients with vertical incision stayed in hospital for more than 15 days, whereas only 2.67% in counter group stayed for more than 15 days. The maximum period of stay in case of vertical incision was 34 days, whereas it was 18 days in case of transverse incision as shown in Table VIII.

Re-visits and Repeat Operations

88% patients with transverse incision came for follow up after 4-6 weeks, and they all had linear healed scar which was barely visible. Five patients of this series were re-operated after 1-1½ years by transverse incision, and it was noted that there were no adhesions and no more difficulties were encountered in repeat caesaren section by transverse incision.

80% patients with vertical incision came for follow up after 4-6 weeks and 20% of them showed hypertrophy of the scar.

Discussion

The advantages of the Pfannenstiel's incision are, remarkably low incidence of immediate and late post-operative complications, early ambulation and relatively much more post-operative comfort for the patient with early discharge from the hospital.

Evisceration and incisional hernias are almost unknown with Pfannenstiel's incision.

The incidence of wound infection with transverse incision is remarkably low as compared with vertical incision as reported by various authors. In the present study wound infection was 3 times more frequent and wound disruption 4 times more frequent with vertical incision as

TABLE VIII
Duration of Stay in Hospital

Post operative days	Transverse incision		Vertical incision	
	No. of cases	%age	No. of cases	%age
7	26	34.66	1	4
8	30	40.00	2	8
9	4	5.33	1	4
10	2	2.67	6	24
11	4	5.33	3	12
12	5	6.67	2	8
13	—	—	2	8
14	2	2.67	3	12
15 & above	2	2.67	5	20

compared to transverse incision. The tendency towards adhesion formation is reduced after transverse incision. In the present study 5 patients were re-operated by transverse incision. During re-operation a remarkable absence of adhesions were revealed.

With good muscle relaxing anaesthesia and proper retraction of muscles laterally adequate exposure is obtained with Pfannenstiel's incision, as revealed in present study.

In the present study, though the time required to open the abdomen by transverse incision was definitely more as compared to vertical incision, but on the other hand closure was quick and easy with transverse incision.

Early ambulation of patient was possible more frequently with transverse incision as compared with vertical incision, thus reducing the post-operative complications. In addition, patients operated by transverse incision were more comfortable and required lesser amount of sedatives and analgesics in the post-operative period.

Duration of post-operative hospital stay was more in patients operated by vertical incision as compared to those operated by transverse incision, same was the observation in present study.

It is said that transverse incision bleeds more than the vertical, but with the knowledge of anatomy and proper technique, this can be easily controlled and never gives any problem. Good blood supply ensures maximum degree of healing when the wound is placed transversely.

Last but not the least the transverse incision gives a cosmetically better scar as compared to vertical incision.

References

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