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Study of Operative Procedures and their Indications in Management of Ventral Hernia

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KEYWORDS

Ventral Hernia,
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A B S T R A C T

Ventral Hernia is the protrusion of the abdominal viscus through the anterior abdominal wall and occurring at any site other than the inguinal or femoral areas. It includes – Divarication of recti with hernia, epigastric hernia, umbilical hernia, paraumbilical hernia, incisional hernia, exomphalos, spiglian hernia, traumatic hernia. The patient was followed up to note the condition of the scar, recurrence, and persistent, post-operative pain. Patients treated with prolene mesh were particularly examined for presence of a sinus. Most of the patients were followed up to minimum of three months. Period which incidence of recurrence is high. One patient was detected to have recurrence within one month after surgery and its surgery was advised. In our series, mortality rate was Nil.

Introduction

An abdominal hernia is one of the common problems faced by the surgeon being easily seen and felt to touch. It receives early recognition by the patient. Inguinal is the most common variety encountered is excluded in the present study.

Definition of “Ventral Hernia” – is the protrusion of the abdominal viscus through the anterior abdominal wall and occurring at any site other than the inguinal or femoral areas. It includes – Divarication of recti with hernia, epigastric hernia, umbilical hernia, paraumbilical hernia, incisional

hernia, exomphalos, spiglian hernia, traumatic hernia. These different types of hernia occur at different types of individuals, therefore chosen this study to compare the incidence of these different hernias, their relation to age, sex and occupation of persons and management.

No incision in the abdomen is immune to development of hernia. It occurs after midline, paramedian, oblique incision and also incision in perineum (Martin, 1966).

In this clinical study of ventral hernia, emphasis has been made on the aetiopathology, symptomatology and management of ventral hernia, from the study of literature and out study of 20 cases which were admitted at our hospital during 1990-92. Cases seen in K.L.E. and Civil Hospital, were studied, and were analysed with respect to age, sex, symptoms, nature of previous operation, presence of scar or post operative wound infection, physical examination findings. Different operative techniques, merits/demerits. A Surgeon can do more for the community by operating on hernia case and seeing that his recurrence rate is low than he can operating on cases of malignant disease (Van Winkle, 1975).

The idea behind the work is to emphasis once again, the need for prevention of complication. Abdomen must be closed with as much care and enthusiasm as the rest of operation was done and with perfect technique, proper material and without under hurry.

Different techniques for repair of ventral hernia were discussed out of them, the anatomical repair was particularly stressed upon as it suits well to majority of these hernias, it's easy to learn and practice and yields satisfactorily good result.

Methodology

In all patients, history of occupation was taken. In cases of incisional iatrogenic hernias, detail history of previous operation was taken. All the patients were investigated before surgery.

The pre-operative preparation mainly consisted of treatment of anaemia, respiratory infection, and in some patients diabetes mellitus and hypertension, had to be controlled. Over-weight patients were

instructed about diet control and exercise. Smoking was forbidden in smokers, chest physiotherapy was given to old and over-weight patients and patients with respiratory infection.

In the immediate post-operative period, abdominal distension was prevented by an indwelling nasogastric tube for at least 48 hours, subcutaneous drains were used to prevent serous collection. Chest physiotherapy was continued in post-operative period too. Wound infection was treated with appropriate antibiotics.

The patient was followed up to note the condition of the scar, recurrence, and persistent, post-operative pain. Patients treated with prolene mesh were particularly examined for presence of a sinus.

Results and Discussion

Physical finding

Size of hernia: Varied from 2cms. In diameter in small epigastric hernia to large 10-15 cms. In incisional hernia.

Size of fascial defect: Varied from 2cms. In small hernia and 10-15cms. In large incisional hernia.

Conditional of skin over hernia: In most of the patients with incisional hernia skin was thin and in some patients scar was broad and in one case skin was ulcerated.

In our series, skin in a case of traumatic hernia was reputed.

Divarication of recti and tone of abdominal muscle:

In 60% of incisional hernia, patients had poor muscle tone and in 30% divarication of recti was present.

Obesity: About 30% of female patients were obese.

Anaemia and Malnutrition: one patient with anaemia and malnutrition.

Diabetes Mellitus: One patient was found to be diabetic was controlled before surgery.

Follow up findings

Patients were followed up at 1st, 2nd and 3rd with at monthly intervals, 3rd monthly intervals & thereafter.

Most of the patients were followed up to minimum of three months. Period which incidence of recurrence is high. One patient was detected to have recurrence within one month after surgery and its surgery was advised. In our series, mortality rate was Nil.

In our series, 7 out of 11, (81.82%), patients developed hernia within one year after previous operation, maximum incidence was within 6 months. Grace and Cox, series patients had incisional hernia within one year of previous surgery. In Ponka's series, showed that hernia occurred within one year of previous surgery (Ponka, 1980).

Akmen and Siedel, quoted by Ponka (1980) had 50% occurring during first 6 months after surgery. Incisional hernia occurring in an early post-operative period is mainly due to silent disruption of deeper layer of the wound or improper suturing of different layers at the time of previous operation. According to Vitranto and Venthian (1968), incisional hernia usually develop within one year of operation and rarely originate after 2-3 years.

In our series, most of the patients were operated only once 90.11%. In only one case where patient was operated twice. In Ponka's series, 73% of patients were operated only once, 16% had two

laparotomies and 11% had 3 or more lapraotomies.

In the present series, the occurrence of incisional hernias are more through infraumbilical midline incision (63.63%). Lower midline incision is the choice of for gynaecologist. Ponka and Obney, had similar high incidence of herniation through the infraumbilical scar.

Moore (Moore, 1968) have shown that the tensile strength incision is even greater than that of paramedian incision. In the lower abdomen, the linea alba is formed only by the anterior rectus sheath, the posterior rectus sheath being deficient, accounting for its tendency to herniate. Most of our cases were after gynaecological operations (63.63%). This is because they were done through midline infraumbilical incision. Abdominal wall laxity, multiparityetc., were additional factors of herniation through gynaecological incisions. Abdominal sterilization formed 27.27%, abdominal hysterectomy 27.27% and L.S.C.S. 9-10%.

In our series, wound infection was found in about 3 cases (29.92%). Irvin & colleagues (Irvin *et al.*, 1977), had wound infection in 24% of their cases. Ponka& Baker, states it to be a significant factors. Baker states that fascial necrosis causes loss of integrity of closure. Anaerobic infection is the main cause. Baker had documented history of wound infection in 40% of his patients. Grace & Cox (Grace *et al.*, 1976), did not find any correlation between infection and herniation. One of 11 was multiparous, abdominal wall weakness with decreased tone seems the probable reason. One of our case had burst abdomen Irvin and Grace & Cox, found burst with incisional hernia because of age of the patient, site of incision, malignancy etc., and not the disruption itself.

Post-operative pulmonary infection increase the incidence by herniation by virtue of the strain produced on the wound closure during the process of coughing or straining. This is of considerable significance in cases of vertical incisions while the patient is straining under light anaesthesia or inadequate relaxation.

General debility consequent upon one of numerous chronic wasting diseases is not an

infrequent problem. Baker, mentions important diseases like visceral carcinoma, rheumatoid disease, cirrhosis and vitamin deficiencies are predisposing factors.

In our series, we had one case of diabetes mellitus, one case of anaemia and malnutrition. These diseases account for poor healing of the wound and weakening of the scar.

Table.1 Occurrence of incisional Hernia

Duration after previous operation	No. of cases	Percentage (%)
Less than 3 months	1	09.09%
3-6	6	54.55%
7-11	2	18.18%
1-5	2	18.18%

In our series, 7 out of 11 patients, i.e., 81.82% had incisional hernia within one year after operation and 2 as late more than 3 years to 5 years.

Table.2 Number of previous operations in incisional Hernia

No. of previous operation	No. of patients	Percentage (%)
One	10	90.11%
Two	1	9.99%
		100%

In our series about 90.11% had only one previous operations.

Table.3 Types of incision and incisional Hernia

TYPE OF INCISION	NO. OF CASES	PERCENTAGE (%)
Infraumbilical midline	7	63.63%
Supraumbilical midline	2	18.17%
Infraumbilicalparamedian	1	09.10%
McBurny's	1	09.10%
		100%

In our series, incisional hernia was more common in infraumbilical incision 63.63% as compared to any other incision.

Table.4 Type of operation after which Hernia developed

Type of operations	No. of cases	Percentage (%)
Abdominal sterilizations	3	27.27%
Abdominal hysterectomy	3	27.27%
Caesarean Section	1	09.10%
<u>Laparotomies:</u>		
Emergency	2	18.18%
Planned	2	18.18%

In our series, incisional hernias were found more common after gynaecological operations.

Table.5 Probable predisposing factors to incisional Hernia

Probable predisposing factor	No. of cases
Wound infection	3
Burst abdomen	1
Multiple laparotomies	1
Increased abdominal pressure	1
Multiparity	3
Diabetes Mellitus	1
Anaemia and Malnutrition	1

Table.6 Symptomatology

Symptomatology	No. of cases
Swelling	19
Pain in swelling	10
Pain related to food	8
Abdominal lump and distension	1
Exomphalos	1

Swelling was the main presenting complaint and the next complaint was pain in the swelling. Abdominal lump and distension was found in a case of obstructed incisional hernia.

Table.7 Operative Procedures

Type of operations	No. of cases
Anatomical repair	14
Mayo's repair	3
Cattle's repair	1
Keel's repair	1
Prolene mesh	1
Total	20

20 patients underwent surgical repair.

Table.8 Types of Hernia and Operative Procedures Used

Types of Hernia	OPERATIONS					Total
	Anatomical repair	Mayo's repair	Cattle's repair	Keel's repair	Prolene Mesh	
Incisional	7	1	1	1	1	11
Epigastric	4	-	-	-	-	4
Umbilical	1	1	-	-	-	2
Paraumbilical	-	1	-	-	-	1
Exomphalos	1	-	-	-	-	1
Traumatic	1	-	-	-	-	1
Total	14	3	1	1	1	20

Table.9 Post-operative complications

Post operative complications	No. of cases
Abdominal distension	1
Wound infection	1

Main complication in our series was wound infection and it was treated according to culture and sensitivity. Abdominal distension was seen in one case. It was treated by nasogastric tube aspiration.

Grace & Cox, states that malignancy and high post operative blood urea are most important than the technique of suturing or wound infection. Vitamin 'C' deficiency is a very important factor according to know the suture material used at previous operation in all cases.

Ponka, in addition to the above mentioned procedure used for umbilical hernia also advocates a vertical closure with separate approximation of anterior and posterior layers of the linea alba for epigastric hernia.

Conclusion

We managed an anatomical repair in about 70% of our cases. It found to be satisfactorily good in our series, except for one recurrences. Our post-operative infection rate was 5%. The fact that incisional hernia is the commonest variety of hernia through the ventral abdominal wall in

most series, including ours. It throws the responsibility on the surgeons.

He who makes an incision for laparotomy should know, how to take it, where to make it and most important of all how to close it well sound knowledge of the anatomy of the anterior abdominal wall, a good understanding of the process of wound healing and strict adherence to the principles of a specific surgery may in future reduce its incidence.

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