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Large Lateral Abdominal Wall Reconstruction

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การซ่อมสร้างผนังหน้าท้องด้านข้างขนาดใหญ่

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การซ่อมสร้างผนังช่องท้องขนาดใหญ่ที่ขาดหายไป เป็นเรื่องที่ยากและท้าทายศัลยแพทย์มาช้านาน โดยเฉพาะส่วนของผนังช่องท้องด้านข้าง ผู้เขียนได้รายงานผู้ป่วย 1 ราย ประสบผลสำเร็จจากการซ่อมสร้างการสูญเสียผนังหน้าท้องเป็นบริเวณกว้าง จากการผ่าตัดเอาเนื้องอก **Malignant schwannoma** ที่อยู่บริเวณด้านขวาของผนังหน้าท้องเกือบทั้งหมดออก ทำให้เกิดการสูญเสียของผนังหน้าท้องทุกชั้นเป็นบริเวณกว้างขนาด 20 x 12 ตารางเซนติเมตร ผู้รายงานได้ใช้ **Ileolumbar bi-pedicled flap** และ **Rectus Abdominis Myocutaneous flap** ไปปิดได้เป็นผลสำเร็จ ผู้ป่วยหายเป็นปกติและมีความแข็งแรงของผนังหน้าท้องดังเดิม.

Reparing of large abdominal wall defect is still a challenging and frustrating task for reconstructive surgeon. The articles on reconstruction of large lower and central abdominal wall defect have long been published for several occasions. Ohtsuka et al[1] (1979) demonstrated the versatility of rectus abominis myocutaneous flap, either superiorly base or inferiorly base, to reconstruct abdominal wall defect.

INTRODUCTION

In this paper we report the successful reconstruction of a fullthickness defect of nearly entire right side of abdominal wall as a result of an en bloc excision of a recurrent malignant schwannoma.

CASE REPORT

A 65 year-old Thai woman presented with recurrent malignant schwannoma on nearly entire right side of abdomen. She had surgical extirpation of malignant schwannoma on the same side of back two years ago. Entire lattisimus dorsi muscle was removed along with the tumor. There was no complaint of symptom of mass on right upper abdomen until it reach nearly 2 times of her own first.

Factor which influenced failure of the hydrostatic reduction included long duration of illness, presented of leading point and underlying colonic pathology in old age.

Clinical evidence of intestinal perforation (peritonitis) or free intraperitoneal air on abdominal radiographs was the only absolute contraindication to the administration of barium enema to the patient suspected of intussusception.

INTRODUCTION

Intussusception is an important acute abdominal condition in paediatric age group especially during infancy. The peak incidence is around six months of age. The principal source of morbidity and mortality (1-2%)[1] is diagnostic delay. Therefore it must be considered in the differential diagnosis of cases with abdominal pain, vomit, rectal bleed and or abdominal mass in children. Then the radiological findings assume great diagnostic significant. The use of barium enema reduction has been widely accepted as the method of choice in the treatment. Cooperation by pediatrician, surgeon and radiologist in selection of the appropiate treatment modality has reduced mortality and morbidity to a minimum. This present study reviews our experience with intussusception, paying particular attention to clinical presentation, radiological aspects and treatment results as well.

MATERIALS AND METHODS

Medical records, radiographs and operative noted of 34 patients with either radiographically or surgical proved intussusception, during the period between January 1982 and January 1988 at Srinagarind Hospital, were obtained for analysis. Of the 34 patients, 19 cases underwent barium enema reduction. The technique of barium enema reduction was considered of rehydration and keeping the enema bag not higher than 3 feet above the table top. The contraindication of barium enema reduction were critically ill of the patients or shock, evidence of peritonitis or free intraperitoneal gas. Following barium reduction of the intussusception, postevacuation abdominal radiograph was obtained. This documents adequate small bowel reflux and also excluded the possibility of reintussusception. The patient was surgically explored if the intussusception was not reduced promptly.

RESULTS

34 cases of intussusception were diagnosed at Srinagarind Hospital during 6 years period. There were 7 cases referred from nearby hospitals. There were 22 male and 12 female patients. The age ranged from 2 months to 42 years. 76.47% of cases were under 1 year of age. The peak incidence was between 4-6 months. (Fig 1)

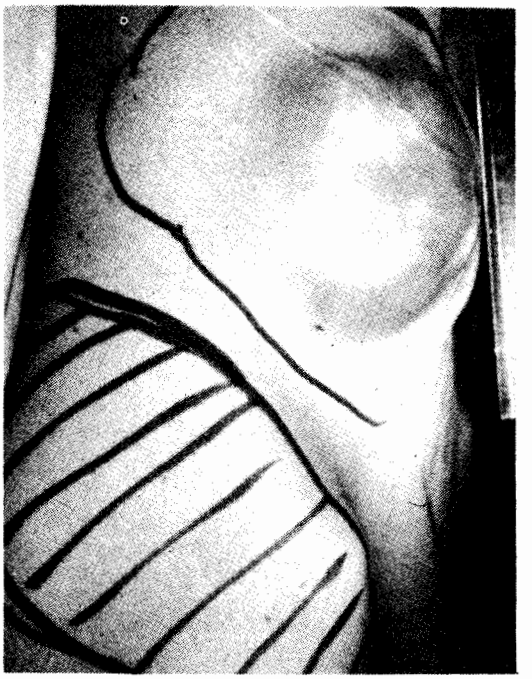

Fig I. Side view of lesion with the marking of large lateral ileolumbar bipedicled flap.

The general health of the patient was good for her age.

On examination there was a hard round mass measuring 15 x 8 cm^2 in size involving throughout depth of abdominal wall. (Fig.I) It occupied nearly entire right upper abdomen and upper half of right lower abdomen. Right rectus abdominis was also incorporated by the mass. (Fig.II)

Preoperative studies including routine laboratory tests and radiographics showed no abnormality. The provisional diagnosis was recurrent malignant schwannoma.

At operation performed in 1985 tumor mass was excised en bloc together with full thickness of abdominal wall. Peritoneum was free from invasion. Right rectus muscle was also removed along with the tumor. Surgical margin was clear of tumor by histological section. (Fig.III)

Fig III. Huge abdominal wall defect after enbloc excision measured 20 x 10 cm^2 between (R) 10^{th} rib and the (R) iliac crest.

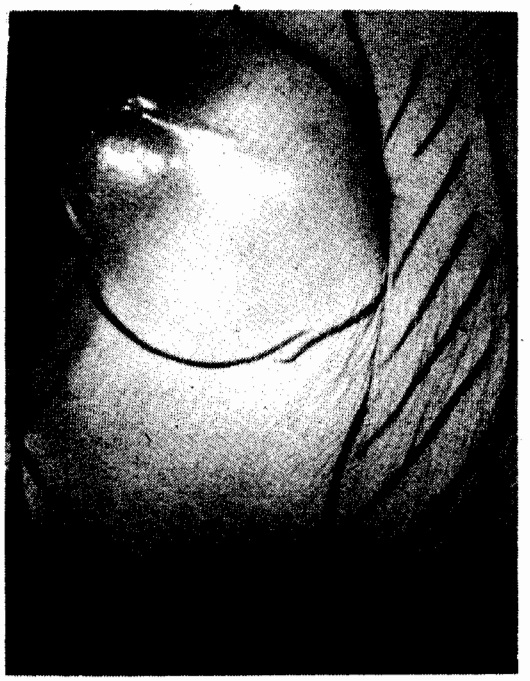

Fig II. Front view of lesion with (R) rectus abdominis involvement, (L) rectus abdominis myocutaneous flap was planned for reconstruction.

The abdominal wall defect measured 20 x 12 cm^2 between the tenth rib and the iliac crest. Marlex Mesh was applied to cover the defect before ilio-lumbar bi-pedicled flap was constructed. The flap was brought upward across right iliac crest but could not reach the upper margin of the defect. Left rectus abdominis superiorly base flap was designed and rotated to join the ilio-lumbar bi-dedicled flap and the upper margin of the defect. (Fig.V) Umbilicus was reconstructed to new position. Skin graft harvested from (anterior) left thigh was applied to secondary defect. (Fig.VI)

Margin of the split skin graft was lost on donor site of flap. A delayed closured and a supplementary split skin grafts were carried out respectively. Sensation was resumed.

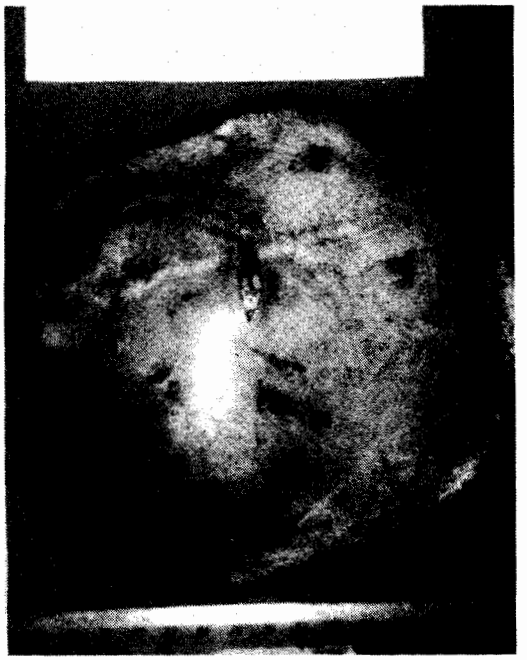

Fig IV. Huge tumor after enbloc excision.

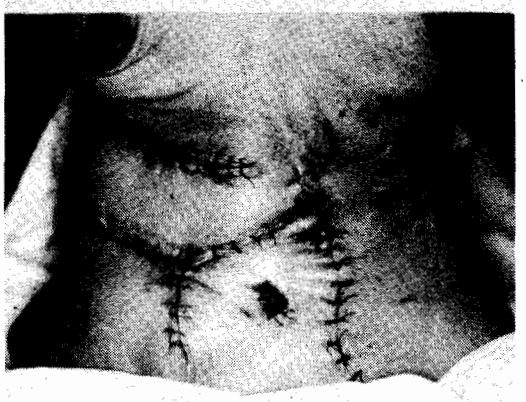

Fig V. After complete reconstruction with (R) ileolumbar bipedicle flap and (L) rectus abdominis myocutaneous flap.

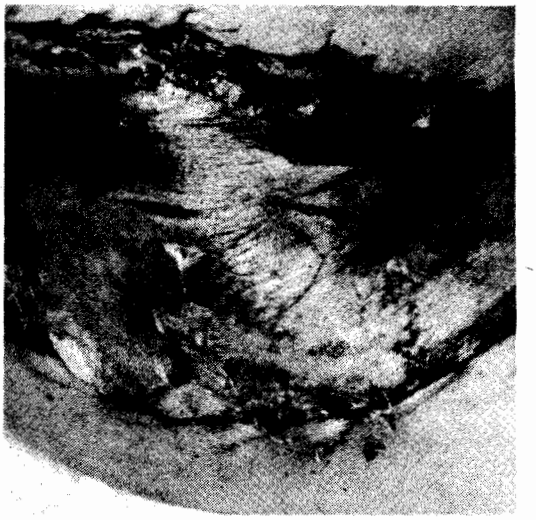

Fig VI. Skin graft over secondary defect at (R) thigh.

DISCUSSION

The reconstruction of major abdominal wall defects has long taxed the ingenuity of the surgeon. The final goals of reconstruction must aim to establish the integuity and support of the fascial components and also the provide good skin coverage. Wangensteen[3,4] (1934 and 1946) demonstrated the suitability of a pedicle of the fascia lata in 17 cases of abdominal wall reconstruction. He pointed out that even in patients with long femers the longest iliotibial tract of fascia is usually too short for tension free repair of defects beneath the costal margin. Therefore, a large upper abdominal defect may be reconstructed with a musculo fascial flap of anterior rectus sheath and part of the external oblique muscle and aponeurosis. Bostwick et al[2] (1977) demonstrated versatility of rectus abdominis myocutaneous flap both superiorly base or inferiorly base but he presented only the coverage of the defects of the lower abdomen, groin and perineum.

H. Ohtsuka et al[1] (1984) report the successful reconstruction of a full-thickness defect

of the lateral abdominal wall as a result of an en bloc excision of a recurrent squamous cell carcinoma originating in the renal pelvis.

The ilio-lumbar bi-pedicled flap is a reliable flap nourished a sufficient blood supply from both ends while rectus abdominis myocutaneous flap is also safe and well vascularized by superficial epigastric vessels. The flap is practical and simple to provide external cover of sufficient strengh to prevent herniation in one-staged operation with a fascia lata graft or plastic prosthesis as internal support.

References

1. Bostwick JB, Hill HL, Nahia F. Repairs in the lower abdomen, groin or perineum with myocutaneous or omental flaps. Plast Reconstr Surg. 1979 Jan; 63: 186-9.
2. O'Hare PM, and leonard AG. Reconstruction of major abdominal wall defects using the tensor fascia lata myocutaneous flap. Br J Plast Surg 1982 Jul; 35: 361-3.
3. Ohtsuka H, Ochik, Seike H. Reconstruction of large lateral abdominal wall defect with and ilio-lumbar bi-pedicled flap. Br J Plast Surg 1984 Jul; 37(3) : 327-9.
4. Wangensteen OH. Large defects of the abdominal wall employing the iliotibial tract of fascia lata as a pedicled flaps. Surg gynecol obstet 1934 Jul; 59 : 766-8.

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