Pediatric Surgery

Inguinal Herniotomy in Children: A Decade's Experience

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ABSTRACT

We reviewed our experience with 1369 inguinal herniotomies in 1340 children performed over the last one decade. Different grades of surgeons were assigned work according to the complexity of cases. Except for the minor scrotal hematoma, other complications were hardly seen. Recurrences were seen in only 2 cases. Careful training and supervision of junior staff in the technique of inguinal herniotomy has led to results that compare favorably to those of specialized units in developed countries.

Key words: *Inguinal hernia.*

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Inguinal herniotomy is probably the commonest operation performed in pediatric surgical practice. Though the procedure may appear to be simple, in a small infant, it is technically demanding and can be difficult even in most experienced hands(1). The purpose of the article is to evaluate the clinical profile and results in our patients and to highlight the technical aspects where we differ from others. This becomes all the more relevant as there is lack of information regarding the results of this operation from our country.

Material and Methods

The hospital records of 1340 children who underwent inguinal herniotomy in the Department of Pediatric Surgery, S.M.S. Medical College from 1st April, 1983 to 31st March, 1992 were reviewed retrospectively and analysed. All children have had a minimum follow up of six months.

In cases of inguinal hernia, we have adopted the policy of offering surgery only when the hernia is clearly demonstrable in the Outpatient Department, whereas in case of a hydrocele, age above 6 months was kept as the dividing line, a few cases of tense hydroceles were operated even in younger infants.

The inguinal herniotomy was always performed on an in-patient basis, requiring total hospital stay of about 48 hours. We adopted a policy of unilateral inguinal hernia repair without contralateral exploration in children having a unilateral inguinal hernia and no evidence of hernia on the contralateral side.

The surgery was usually performed under inhalational anesthesia. The surgery was

performed through the standard transverse groin incision. Incision of the external oblique apponeurosis and dissection of the sac from the surrounding cord structures with high ligation with a nonabsorable suture was done. In 46 neonates and young infants, Mitchell-Banks approach of operating through external inguinal ring was utilized.

Results

There were 1305 boys and 35 girls, a ratio of 37:1. Nine hundred and thirty three (69.6%) patients presented with inguinal hernia, 384 (28.7%) with hydroceles and another 23 (1.7%) with hydrocele of the cord. Sixty children presented with bilateral inguinal herniae and 29 of these had bilateral inguinal herniotomy in the same sitting. Of these 1280 children had unilateral problems, 880 presented with right-sided inguinal hernia or hydrocele (68.75%) and 400 with left-sided one.

Inguinal hernia was of sliding variety in 18 cases. A clear female preponderance was noted in this variety (77.8%). The viscera forming the lateral wall of the sac included bladder (n=4), sigmodi colon (n=1), fallo-

TABLE I–*Complications with Inguinal Hemiotomy*

Complications	No. of patients
Scrotal hematoma	76
Wound infection	4
Damage to vas deferens	2
Recurrence	2
Scrotal abscess	1
High testis (entrapment)	0

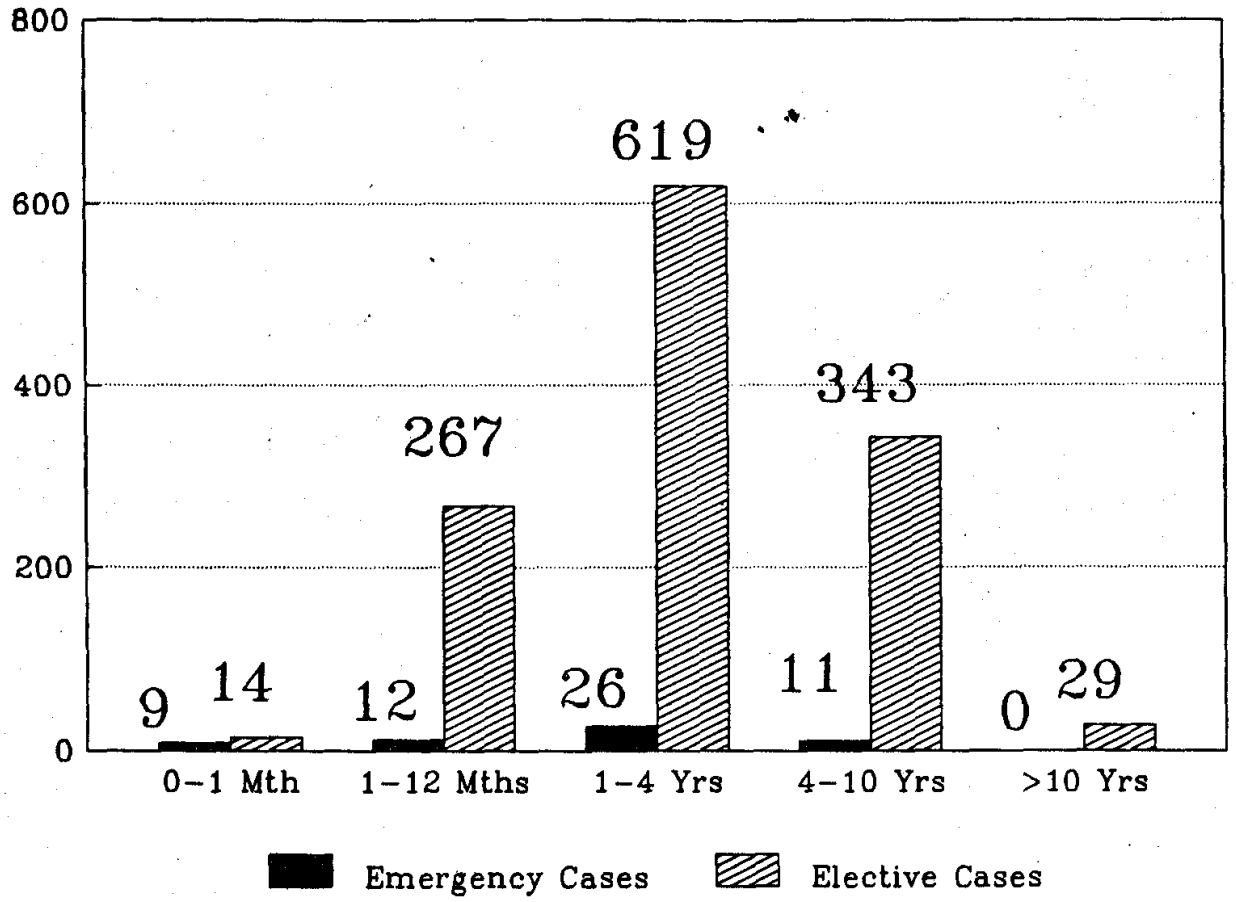

Fig. 1. Number of cases as related to the age and mode of presentation.

pian tube with ovary (n=13). In all these cases, hernia sac was ligated distal to the visceral contents and divided; the proximal sac was then invaginated into the peritoneal cavity through the internal ring. The internal ring was then closed in the female patients whereas, adequate narrowing was performed in the male patients. Fifty eight children (4.49%) presented in emerency with an irreducible hernia. Of these 57 were males. Nine (39%) of these were neonates, another 12 (4.3%) were less than one year of age (*Fig. 1*). Seven children required emergency surgery on the same day of admission. Three had non-viable bowel requiring resection anastomosis. The other 51 children were initially treated conservatively (reduction using gentle taxis under cover of sedation); and underwent repair of the hernia 4-5 days after admission.

Post-operative complications other than minor scrotal hematoma were negligible in our series (*Table I*). Recurrences were seen in only two cases. Both were of indirect type and occurred through unrecognized rents in the base of the friable sac. Re-exploration and religation of the hernial sac was successfully done. Vas injury occurred in two cases, these were recognised and repaired at the time of surgery by direct end to end anastomosis over a splint using 6/0 vicryl using surgical loup.

Discussion

The survey shows that the age, and sex incidence and the presenting side in our patients are similar to those of othere reported series from Europe and America(2,3). We did not see any case of direct inguinal hernia, though sliding hernia was seen in 1.5% cases.

We noted a rather low incidence of irreducible hernias presenting as emergency. This, however, does not underscore the need for elective operative treatment of inguinal hernia as soon as it is possible following diagnosis. Emergency operation for irreducible hernia can be a difficult procedure because the cord structures and hernia/sac are often very edematous and the risk of damage to the delicate testicular vessels and vas deferens is much higher than in elective herniotomy(4). An abdominal extraperitoneal approach for inguinal hernia has been also described for infants by Jones and Towns(5). We have recently used this in one of our patients and found it extremely safe and easy procedure. Fortunately, majority of irreducible hernias were reduced with gentle taxis after adequate sedation.

There are some points of technique we follow which are at variance with other reports. We favour full relaxation with endotracheal anesthesia instead of dissociative anesthesia (Ketamine). Ketamine results in hypertonia and a battle with tissues in a small incision. Again we routinely open the anterior wall of the inguinal canal except in neonates and very young infants to facilitate proper display and handling of structures. A non-absorbable suture is used to ligate the neck hernia. Chromic catgut and other absorable sutures have been incriminated as the direct cause of recurrence in a recent report from America(6). Other technical details worth stressing are minimal mobilization of the cord structures and posterior floor of the inguinal canal. The dissection is kept within the confines of the cremastric. Careful pressure on the lower abdomen just prior to cutting the suture ligature and excising the distal hernia sac helps in identifying leakage of peritoneal fluid from an otherwise unrecognised tear in the proximal sac(6).

Post-operative complications have been uncommon in our patients with recurrence rate as low as 0.15%. Post-operatively, we

have encountered minor scrotal hematoma in 5.6% of cases; this responded to conservative measures and never required drainage. As longterm follow-up is lacking, we are unable to comment on the incidence of late complications such as testicular atrophy or infertility due to unrecognised damage to vas deferens.

Grosfeld *et al.*(6) have elaborated on nine different reaons regarding recurrence after herniotomy and as many as four of them are directly related to the technique of surgery. It has been deliberated that the incidence of recurrence is higher when performed by a general surgeon inexperienced in dealing with diminutive structures, unfamiliarity with special anatomic variation and amplification of adult concepts(7). All ranks of surgeons perform herniotomy in our set up and complications have not been found relating to the ranks. But there could be bias in this particular interpretation as more demanding cases *e.g.,* hernias in case of neonates, are usually performed by more experienced personnel, not by Junior House Surgeons. Residents are required to assist fifty inguinal herniotomies followed by as many under direct supervision of a consultant before they are allowed to operate independently. Overall, we believe that our results will be representative of any other pediatric surgical unit in the country and are definitely comparable to the reports from the developed countries. We conclude with recommending a mandatory training of all 'general surgery' residents in minor pediatric surgery, as many children are still operated at district hospital level and may not reach a specialised teritary centre like ours.

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FELLOW OF INDIAN NATIONAL SCIENCE ACADEMY

Dr. K.N. Agarwal, Professor of Pediatrics, Banaras Hindu University has been elected as Fellow of the Indian Science Academy, 1993. Heartiest congratulations from the Pediatric fraternity. *–Editor*