Letters to the Editor

Rare abdominal wall hernias in infants and children

In the pediatric age group inguinal hernia is the most common among all abdominal wall hernias, followed by umbilical and para-umbilical hernias. Other varieties of abdominal wall hernias (such as femoral, lumbar and Spigelian) although well recognized are very rare in children and have received little attention in reference textbooks of pediatric surgery. Over a 10-year period from June 1989 to June 1999, a total of 970 children with inguinal hernias were treated at our hospital. During the same period we treated only 8 children (Table 1) with the very rare, unusual types of abdominal wall hernias (4 femoral, 2 lumbar and 2 Spigelian). Femoral hernias are rare in the pediatric age group. Over a period of 30 years from 1965 to 1996, Radcliffe and Stringer in a review of the literature collected only 214 children with femoral hernias.[1] They form approximately 0.4-1.1% of all groin hernias. We found a 0.4% incidence of femoral hernias in relation to inguinal hernias. Femoral hernias are most common in the 5-10 year age group, and unlike adults there is a similar sex incidence, and 58% are seen on the right side, 29% on the left side, and bilateral in 13%.[1] The exact etiology of femoral hernia is not known. Several factors including parity, increased intra-abdominal pressure, and previous inguinal surgery have been cited as important predisposing factors in adults. Pregnancy plays an important predisposing factor in adults and this accounts for the preponderance of femoral hernia in females. This however is not the case in children, where femoral hernia is considered congenital. This is supported by its occurrence in infants and twins. Previous inguinal herniotomy has been incriminated as an etiological factor for femoral hernia in children. This however has not gained much support and others consider it a misdiagnosis with a coincidental inguinal hernia, which is common among children with femoral hernia (Figure 1). Among 179 children with femoral hernias, a correct preoperative diagnosis was made in only 43%[1] and because of this it is not rare for some of these children to have more than one operation for recurrent inguinal hernia before the correct diagnosis of femoral hernia is made. This is attributed to its rarity and lack of awareness among physicians caring for these children. A 15%-20% incidence of incarceration or strangulation among children with femoral hernias calls for early diagnosis and repair.[1] Although several operative approaches have been

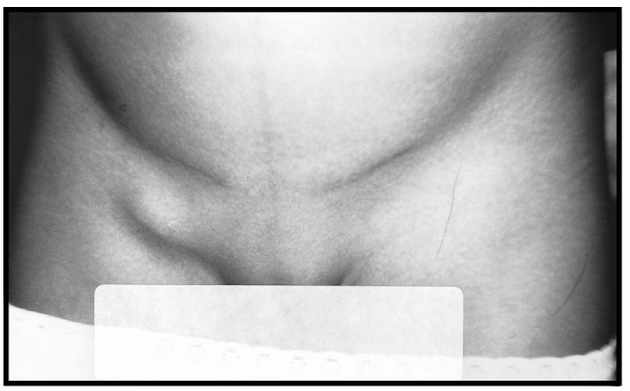

Figure 1 - Clinical photograph of a 6-year-old girl with femoral hernia.

Table 1 - Clincal features of children with rare abdominal wall hernias.

Number	Age	Sex	Type of Hernia	Site	Associated anomalies
1	3 Years	Male	Femoral	Right	None
2	7 Years	Female	Femoral	Right	None
3	6 Years	Female	Femoral	Right	None
4	5 Years	Female	Femoral	Right	None
5	3 Days	Male	Lumbar	Left	None
6	1 Day	Female	Lumbar	Right	Focal nodular hyperplasia of liver, hydrocephalus, rib and vertebral anomalies, absent right kidney
7	1 Day	Male	Spigelian	Left	Micrognathia, cleft palate, malformed ears, right club foot, left undesended testes, phacomelia of left lower limb
8	3 Months	Male	Spigelian	Left	Left undesended testes

described for femoral hernia repair in children, we like others feel that simple ligation and excision of the hernial sac is insufficient, and in order to obviate recurrence this must be supplemented with repair of the femoral canal.[1]

Congenital lumbar hernia is very rare in children with only 45 cases reported in the English literature.[2] It is divided into 3 types, superior, the most common through the superior lumbar triangle (Grynfeld-Leeshatt triangle), inferior through the inferior lumbar triangle (Petit's triangle) and diffuse as a result of generalized deficiency of the lumbar muscles. In children it is well known that congenital lumbar hernia is frequently associated with other often multiple and severe congenital anomalies. Among these the lumbocostovertebral syndrome is the most common as seen in one of our patients.[3] Other associated anomalies include anorectal malformations, hydrocephalus, congenital diaphragmatic hernia, caudal regression syndrome, absent kidney and meningomyelocele.[2,3] The exact etiology of lumbar hernia is not known. In the absence of other associated anomalies, congenital lumbar hernia is of obsecure origin. Other etiological factors include embryological defects, localized neurapraxia, nerve entrapment in spina bifida and increase in intra-abdominal pressure. In the majority of cases congenital lumbar hernia is repaired primarily. This, however is not always possible and sometimes in large defects prosthetic materials are required for the repair.

Spigelian hernia is rare and exceedingly so in infants and children. It is most common in adult females between the ages of 40 and 70 years, but in children Spigelian hernia made up only 3% of a large collective series of Spigelian hernia,[4] and in an extensive review of the literature from 1935 to 1998, only 37 cases of Spigelian hernias were collected.[5] Typically Spigelian hernia occurs through the Spigelian fascia at the level of the semicircular line of Doglous where it is thinnest and usually lies deep to the external oblique aponeurosis. Due to this, it is sometimes difficult to localize the hernia if the sac is empty, and in situations where the diagnosis is not clear, ultrasonography is accurate in localizing the hernial defect. It is also advisable to mark the site of the hernia pre-operatively to obviate the difficulties in sometimes localizing the hernial defect intraoperatively. In children, Spigelian hernia is more common in males, and although in the majority the hernia is congenital, traumatic as well as postoperative Spigelian hernias have been reported.[5] Associated anomalies are common with Spigelian hernia, and a 35% incidence of associated anomalies have been reported.[5] These include inguinal hernia, umbilical hernia, congenital diaphragmatic hernia, meningomyelocele, neuroblastoma, cleft palate, clubfoot, micrognathia and undescended testes. Of interest was the finding of associated undescended testes in 28% of male children with Spigelian hernias which may have an etiological relationship.[5] A variety of organs have been reported in the hernial sac which include small and large intestines, stomach, ovary, gallbladder, Meckel`s diverticulum and testes, and as irreducibility and strangulation are common in Spigelian hernia, early diagnosis and treatment are advocated.[5]

Ahmed H. Al-Salem
P.O. Box 18432
Qatif 31911
Kingdom of Saudi Arabia

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