

East African Medical Journal Vol. 81 No. 9 September 2004

FEMORAL HERNIAS IN CHILDREN AT THE OLABISI ONABANJO UNIVERSITY TEACHING HOSPITAL, SAGAMU, NIGERIA

A. M. O. Shonubi, MBBS, FMCS, FWACS, Consultant Paediatric Surgeon, A. A. Musa, MBBS, FWACS, Consultant General Surgeon, B. A. Salami, MBBS, FMCS, FWACS, Consultant General Surgeon, S. A. Sotimehin, MBChB, MSc, MCH, Senior Registrar, Paediatrics and G. A. Sule, MBBS, Surgical Registrar, Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria

Request for reprints to: Dr. A. M. O. Shonubi, P.O. Box 111, Sagamu, Ogun State, Nigeria

FEMORAL HERNIAS IN CHILDREN AT THE OLABISI ONABANJO UNIVERSITY TEACHING HOSPITAL, SAGAMU, NIGERIA

A. M. O. SHONUBI, A. A. MUSA, B. A. SALAMI, S. A. SOTIMEHIN and G. A. SULE

ABSTRACT

Objective: To ascertain the diagnostic accuracy and outcome of surgical treatment in Nigerian children referred for paediatric surgical opinion at the Olabisi Onabanjo University Teaching Hospital, Sagamu, South-west Nigeria.

Design: A retrospective review of our practice experience over a 15-year period; between January, 1989 and December, 2003.

Setting: The Olabisi Onabanjo University Teaching Hospital (OOUTH), serves as a referral centre for other government and private hospitals in and around the Ogun State, South-west Nigeria. The OOUTH, though a tertiary medical centre also receives patients who present directly at the General Out-Patient Clinics and the Emergency Units of the hospital. The catchment population is estimated at 7.5 million.

Subjects: The medical records of all patients under 14 years of age with a final diagnosis of femoral hernia who presented between January, 1989 and December, 2003 were reviewed.

Methods: The age, sex, mode of presentation, findings at surgery, procedure performed, immediate post-operative and 12 months follow-up details were recorded.

Results: Seven of 1,213 (0.58%) patients with groin hernias within the study period had femoral hernias; four (57%) were girls and three (43%) were boys. Age range was 3 to 9 years. The mode of presentation in all the children was recurrent lump in the groin. Five patients (71%) had right sided lump while the lump was on the left side in two of the patients. The duration of symptoms ranged from two years to eight years. The provisional diagnosis by the referring general practitioners and paediatricians were incorrect in all seven patients. Five patients (71%) were correctly diagnosed preoperatively by the attending surgeon while two were thought to be inguinal hernias.

Conclusion: The diagnosis of femoral hernia remains a challenging problem in childhood because of its rarity and similar clinical presentation as inguinal hernia.

INTRODUCTION

Femoral hernias are uncommon in childhood, with a reported incidence of less than 1% of all groin hernias in most series(1,2). Many paediatric surgeons have limited experience with femoral hernias in their clinical practice(1-10). Indeed, in the Fosburg(5) survey, fifty cases of femoral hernias were shared among 27 general and paediatric surgeons. In the survey, only three surgeons had seen more than four cases and none had seen a strangulated femoral hernia. Consequently, unfamiliarity with the clinical presentation may result in an incorrect or delayed diagnosis(2,7). Femoral hernias are most frequently misdiagnosed as inguinal hernia(6). The purpose of our study was to review our experience with femoral hernias over a 15-year period.

MATERIALS AND METHODS

We retrospectively reviewed the medical records of all children who had groin hernia over a 15-year period; January, 1989 to December, 2003. One thousand two hundred and thirteen records were available; 1,206 patients had herniotomy and seven patients had femoral hernia repair. The seven patients who had femoral hernia repair formed the subjects of this review.

The data obtained included age at presentation, sex, presenting symptoms, duration of symptoms, side of the hernia, pre-operative diagnosis, operative technique, contents of the hernia sac and the post-operative course of the patients.

RESULTS

Seven children (0.58%) had femoral hernia repair in the 15-year period. The total number of herniotomy done during the same period was 1,206. There were three males and four females giving a male to female ratio of 1:1.3. The age ranged from 3 to 9 years with a mean of 5.6 ± 2.3 years. All presented with recurrent lump in the groin. The duration of symptoms ranged from one to eight years with a mean of 3.4 ± 2.4 years. Five (71%) were right sided and two (27%) left sided. No child had a bilateral femoral hernia.

None of the patients was correctly diagnosed by the referring general practitioners or paediatricians. Five of

the patients (71%) were correctly diagnosed preoperatively by the surgeon and two were thought to be inguinal hernias. None of the patients had concomitant inguinal hernia and none presented with incarceration.

There was an empty peritoneal sac through the femoral ring in all the patients. The McVay hernia repair technique utilising the conjoint tendon and Cooper's ligament to close the femoral canal was performed in all cases. There were no immediate postoperative complications. No recurrence was documented within a twelve-month follow up period. Table 1, shows a summary of the characteristics of the femoral hernia in the seven children.

Table 1

Characteristics of femoral hernia in seven children

Age (years)	Sex	Presenting symptom	Duration of symptoms (approx. years)	Pre-operative diagnosis	Operative diagnosis
6	F	Rt. groin swelling	3	Rt. femoral hernia	Rt. femoral hernia
9	M	Rt. groin swelling	8	Rt. femoral hernia	Rt. femoral hernia
3	F	Lt. groin swelling	1	Lt. inguinal hernia	Lt. femoral hernia
5	F	Rt. groin swelling	2	Rt. femoral hernia	Rt. femoral hernia
8	F	Rt. groin swelling	5	Rt. femoral hernia	Rt. femoral hernia
5	M	Lt. groin swelling	3	Lt. femoral hernia	Lt. femoral hernia
3	M	Rt. groin swelling	2	Rt. inguinal hernia	Rt. femoral hernia

DISCUSSION

Femoral hernia in the paediatric age group was first described in two girls by Sir Astley Cooper in 1827(8). Since then, its aetiology has remained a subject of discussion(4,5,8). Some workers have suggested increased intra-abdominal pressure as a possible aetiopathogenesis(1). However, pathological conditions that could cause increased intra-abdominal pressure are rarely encountered in children(5,8). Thus, the more commonly accepted hypothesis is that propounded by McVay and Savage, which postulates a congenital narrow posterior inguinal wall attachment onto Cooper's ligament, resulting in enlarged femoral ring(7,10,11).

All the patients in this review were younger than 10 years of age at presentation and had no underlying conditions related to increased intra-abdominal pressure. This is similar to the findings by De Caluwe *et al*(1)

in which 87% of their patients were younger than 10 years at presentation. We surmise that the young age at presentation supports a congenital aetiology rather than an acquired.

The frequency of incorrect diagnosis by the referring general practitioners and paediatricians as well as the diagnostic accuracy by the paediatric surgeon in our review is similar to experiences reported in some other studies(1,10,12,13). The plausible reasons that have been suggested for incorrect diagnosis of femoral hernias in children include; rarity of the condition and inexperience of most doctors with femoral hernia, the most frequent occurrence of inguinal hernias in the paediatric age group, failure to consider femoral hernias in the differential diagnosis of groin masses, improper clinical examination and failure of adequate exploration at surgery(7).

Clinically, the lump in a femoral hernia is located lateral and below the pubic tubercle. Thus, a proper

clinical examination as well as an awareness of this surgical pathology in the differential diagnosis of a groin swelling in children should occasion less frequent misdiagnosis of femoral hernia. Furthermore, correct preoperative diagnosis will facilitate the appropriate surgical management and prevent unnecessary morbidity and re-operation.

Although there is no known congenital femoral sac as in indirect inguinal hernia, we found a distinct peritoneal sac through the femoral ring in all of our patients. This is similar to the findings by Marshall(13). Different techniques of repair have been proposed for the treatment of femoral hernia. These include, simple dissection and ligation of the hernia sac, some complex plastic procedures and, recently laparoscopic femoral hernia repair(3-5,7,8,14). However, no surgeon has had enough experience with femoral hernia repair to prefer one particular technique over another but most agree that some form of repair procedure reduces the chances of recurrence compared with simple herniotomy (15-17). We employed McVay hernia repair utilising the conjoint tendon and Cooper's ligament to close the femoral canal. In the two patients with preoperative diagnosis of inguinal hernia, no inguinal hernia sac was found during operation. Thus, the same skin incision was converted to a preperitoneal approach for McVay repair.

The two patients misdiagnosed by the surgeons were each aged three years. The reason for the misdiagnosis was not quite obvious. We wonder if this could be ascribed to more clinical difficulty in differentiating a femoral hernia from an inguinal hernia in the much younger child. If this is a plausible reason, then there is a need to be even more careful in the clinical evaluation of groin swellings in the very young children in order to avoid misdiagnosis.

ACKNOWLEDGEMENTS

To Mrs. O. A. Osunlaja, Mr. O.A. Akinniranye, other members of staff of the medical records department of

our hospital for their assistance in retrieving the records of the patients for this study. We also thank Dr. O. A. Jeminusi, consultant community health physician for the information on population coverage.

REFERENCES

1. De Caluwe, D., Chertin, B. and Puri, P. Childhood femoral hernia: a commonly misdiagnosed condition. *Pediatr. Surg. Int.* 2003; **19**:608-609
2. Nayeem, N. Femoral hernia in children. *Brit. J. Clin. Pract.* 1990; **44**:383.
3. Anderas, P., Jona, J.Z. Glickliah, M. *et al.* Femoral hernias in children. An infrequent problem. *Arch. Surg.* 1987; **122**:950-951.
4. Burke, J. Femoral hernia in childhood. *Ann. Surg.* 1967; **166**:287-289.
5. Fosburg, R.G. and Mahin, H.P. Femoral hernia in children. *Amer. J. Surg.* 1965; **109**:470-475.
6. Gul, Y. Femoral hernia in children. *Irish Med. J.* 2000; **93**:183-184
7. Chapman, W.H.H. Femoral hernia in children: an infrequent problem revisited. *Military Med.* 1991; **156**:631-633.
8. Ollero, Fresno, J.C., Alvarez, M., Sanchez, M. *et al.* Femoral hernia in childhood: review of 38 cases. *Pediatr. Surg. Inter.* 1997; **12**:520-521.
9. Radcliffe, G. and Stringer, M.D. Reappraisal of femoral hernia in children. *Brit. J. Surg.* 1997; **84**:58-60.
10. Al - Shanafey, S. and Giacomantonio, M. Femoral hernia in children. *J. Pediatr. Surg.* 1999; **34**:1104-1106.
11. McVay, C.B. and Savage, L.E. Etiology of femoral hernia. *Ann. Surg.* 1961; **154**:25-32.
12. Tam, P.K. and Lister, J. Femoral hernia in children. *Arch. Surg.* 1984; **119**:1161-1164.
13. Marshall, D.G. Femoral hernias in children. *J. Pediatr. Surg.* 1983; **18**:160-162.
14. Lee, S.L. and DuBois, J.J. Laparoscopic diagnosis and repair of pediatric femoral hernia. *Surg. Endosc.* 2000; **14**:1110-1113.
15. Asai, A., Takehara, H., Okada, A. *et al.* A case of femoral hernia in a child. *J. Exp. Med.* 1992; **39**:145-147.
16. Zaman, K., Taylor, J.D. and Fossard, D.P. Femoral herniae in children. *Ann. R. Coll. Surg. Engl.* 1985; **67**:249-250.