Single Scrotal Incision Orchiopexy for Palpable Undescended Testis

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OBJECTIVE: To prospectively evaluate the Bianchi single scrotal incision technique for orchiopexy in boys with palpable undescended testis.

METHODS: A total of 35 orchiopexies were performed in 28 patients. The patent processus vaginalis was dissected and cut high without ligation, while in Bianchi’s original procedure, the patent processus vaginalis is dissected up to the external inguinal canal, ligated high and divided. Testicular size and position were assessed at 2 and 6 weeks and 6 months.

RESULTS: The single incision technique was successful in all cases. All testes were satisfactorily positioned in the scrotum. All testes showed good anatomical and cosmetic results at 6-month follow-up.

CONCLUSION: Single scrotal incision orchiopexy without ligation of the patent processus vaginalis has proved to be simple, safe and effective in selected cases compared with the standard two-incision approach in the treatment of palpable undescended testis. [Asian J Surg 2006;29(1):25–7]

Key Words: cryptorchidism, orchiopexy, patent processus vaginalis, scrotum, testis

Introduction

The majority of undescended testes are palpable distal to the inguinal canal. Traditionally, palpable undescended testis are managed using a procedure that includes two incisions. The mobility of the skin in the paediatric population and the short distance from the external to internal inguinal ring permits mobilization of the testes and easy separation of the processus vaginalis from the vas and vessels through a single scrotal incision.1 Herniotomy is performed along with orchiopexy to close the associated patent processus vaginalis. Ligation of the hernial sac has been considered mandatory for a successful repair. However, various studies in children and adults have confirmed that non-ligation of the proximal sac during indirect hernia repair is not associated with an increased rate of recurrence.2–4

Patients and methods

We prospectively evaluated single scrotal incision orchiopexy (SSIO) without sac ligation for managing all cases of palpable undescended testis below the external inguinal ring that met our inclusion criteria. Patients were examined preoperatively and intraoperatively under general anaesthesia to exclude retractile testis, ectopic testis and patients with previous inguinal surgery. The final decision to operate was based on the ability to push the testis down to the root of the scrotum under general anaesthesia. The surgical technique is modified from Bianchi’s method and was learned and perfected by one author (AM) under Bianchi’s direct supervision.5 While in Bianchi’s original technique, the hernial sac is ligated high after dissection, in our technique, we do not ligate the hernia sac but just divide it
as high as possible. The procedure was performed under general anaesthesia supplemented by caudal block. A transverse scrotal incision was made (Figure 1) and a dartos pouch was created through this incision. The testis was approached using blunt dissection followed by sharp dissection of the surrounding tissues and investing structures. The hernial sac was identified as present in 21 of the 35 testicular units. It was carefully separated from the cremasteric fascia and the cord and divided as high as possible, then allowed to fall back into the peritoneal cavity. The neck of the hernial sac was not ligated. The testis was then relocated into the dartos pouch and the opening in the dartos was narrowed around the cord with absorbable sutures (Figure 2) but no suture of the tunica. Oral ibuprofen was given for pain relief. No antibiotics were given. Follow-up was scheduled for 1 week postoperatively.

Results

Twenty-eight patients were treated surgically between February and September 2003 using SSIO in 35 orchiopexies. Age ranged from 10 months to 9 years. All patients had congenital undescended testes, which was bilateral in seven patients, right side in 15 and left side in six. The single incision technique was possible in all selected cases. Average operating time was 20 minutes per testicular unit. All testes were satisfactorily positioned into the scrotum (Figure 3). In the early postoperative period, one patient developed wound infection. Six months postoperatively, while there was no testicular atrophy, one patient with lumbar meningomyelocele and neurological deficit developed an inguinal hernia on the same side. During follow-up (ranging from 2 to 6 months), all testes showed good cosmetic results.

Discussion

Traditional orchiopexy requires identification of the testis, vas deferens and spermatic vessels followed by separation and ligation of the processus vaginalis and/or hernial sac as well as other investing structures, then placement of the testis without tension in the dependent scrotum. These requirements led to a standard two-incision surgical approach. Most undescended testes are palpable distal to the external inguinal ring, and the short distance between the external ring and the upper scrotum in children implies that it should be possible to perform orchiopexy using a minimally invasive technique through a single scrotal incision for undescended testis lying distal to the external ring.
This concept was developed by Bianchi and Squire. They suggested that adequate cord length depended more on releasing the hernial sac from the cord rather than on dissection of the cord vessels, and this can be achieved with a single scrotal incision and moving the incision using retraction. They promoted this technique for its improved cosmesis, shorter operative time and one less incision to close. Docimo argues on the basis of his analysis that SSIO is less successful as patient age at surgery increases. Lais and Ferrow found that dissection of the processus vaginalis from the cord below the external ring with this technique was time-consuming, required more skill, and led to more complications. Others state that this technique is well tolerated for palpable primary, secondary ascended or even trapped testis, and that the procedure is well tolerated, cosmetically pleasing and associated with a short operative time with acceptable complication rates. Misra et al acknowledge that a significant number of undescended testes lie in the region of the pubic tubercle without a hernial sac, and they can be managed by scrotal mobilization alone. According to Jawad, this is a satisfactory approach for any palpable undescended testis, requiring less dissection and anatomical disruption of the inguinal region and giving excellent cosmesis. Parsons et al describe a modified approach using a low scrotal incision with an inguinal incision if a patent processus is identified, i.e. in 20% of cases. In contrast, we accomplished orchiopexy in all our cases without an added groin incision, even though our study included children of a wide age range (10 months to 9 years). This is attributable to the fact that we did not routinely ligate the neck of the patent processus vaginalis. The average operating time was 20 minutes. There was no intraoperative complication in any patient. To our knowledge, our modification of Bianchi’s original technique has not been previously reported.

Smedberg et al, Mohta et al and Gharaibeh and Matani found that non-ligation has no untoward effect on early complications and recurrence rates in long-term follow-up. In our study, only one case with lumbar meningomyelocele and neurological deficit had a hernia at 6 months’ follow-up.

Single scrotal incision orchiopexy is a simple and safe technique compared with the standard two-incision approach and has been proven to be of value in a number of studies for correction of undescended testis. This procedure is possibly a good surgical approach when the testis lies distal to the external inguinal ring. Preselection of cases is important. Ligation of the hernial sac may not be required.

References