Splenogonadal fusion – not just another hydrocoele

KP KENNEDY¹, S BARNARD², MJ SPEAKMAN¹

Departments of ¹Urology and ²Radiology, Taunton and Somerset NHS Trust, Taunton, UK

ABSTRACT

Splenogonadal fusion is a rare congenital abnormality. In this case report, the diagnosis of splenogonadal fusion was made after the removal of an abnormal mass at 'routine' left herniotomy. A cautious approach at surgery resulted in no apparent damage to the testicle. A short review of the literature is included.

KEYWORDS

Testes – Spleen – Fusion – Abnormalities

CORRESPONDENCE TO

Miss KP Kennedy, SHO in Urology, Great Western Hospital, Swindon SN3 6BN, UK
T: +44 (0)1793 604755; F: +44 (0)1793 604771; E: katherinephilippakennedy@hotmail.com

A 4-year-old boy was referred to urology clinic with a large, tense left hydrocoele. Direct questioning revealed that the child's birth was induced at 36 weeks after a short period of intra-uterine growth retardation. The birth itself was uncomplicated and a baby check at day 1 was entirely normal with both testicles present in scrotum. At clinic, the presence of the hydrocoele was confirmed and the boy was listed for a left herniotomy.

A standard groin incision was used at surgery and exploration revealed a normal vas deferens and normal blood vessels. As expected, the processus vaginalis was patent; however, a fine, dark-red, tubular structure was seen passing down through the processus vaginalis and attaching onto the left testicle. This structure was removed from the testis and the edge over-sewn. The top end of the structure was suture ligated, the tunica vaginalis sac twisted, ligated and excised and the wound closed.

Histology revealed the tubular structure to consist of splenic tissue with a fibrous capsule. There was no atypia and simply reactive fibrosis of the tunica vaginalis. These features were consistent with a diagnosis of splenogonadal fusion.

The child subsequently underwent a technetium-labelled sulphur colloid scintigram to search for further ectopic splenic tissue and check for completeness of excision (Fig. 1). The scan demonstrated a normal liver and spleen, but some activity in the left hemi-scrotum.

An ultrasound scan of the scrotum showed an area of homogeneous echogenicity with the same echo texture as spleen, lying lateral to the left testicle. This is assumed to be a remnant of the ectopic splenic tissue. The scan did not reveal any other ectopic tissue.

The child had no complications from surgery and will have a repeat ultrasound scan at 1 year post-surgery to search for any progression of the ectopic tissue.

Discussion

Splenogonadal fusion is a rare, benign, congenital anomaly thought to occur between the 5th and 8th gestational weeks.¹ Approximately 150 cases have been reported in the literature. The aetiology is uncertain, but may be secondary to injury to the fetus.²

The abnormality is virtually always on the left side where immature splenic tissue adheres to the developing gonad, epididymis or vas deferens.³ The splenic tissue is subsequently pulled in a caudal direction with descent of the gonad.

The fusion may be continuous or discontinuous – each form occurring with equal frequency. In the continuous type, the principal spleen is connected to the gonad by a cord-like structure that may be fibrous, totally splenic or beaded with multiple splenic nodules.⁴ In the discontinuous type, there is no continuity between the principal spleen and the ectopic splenic tissue adherent to the gonad.

Occurrence in females is very rare with a male:female ratio of 15:1.¹ This figure may of course be inaccurate due to the relative inaccessibility of the ovary to examination.⁵

Patients most commonly present under the age of 20 years with cryptorchidism, left inguinal hernia or left scrotal mass. Presentation may, however, be due to the complications of the fusion, *e.g.* bowel obstruction, acute painful scrotal splenic enlargement or rupture. One-third of cases are associated with other congenital abnormalities including

Figure 1 Technetium-labelled sulphur colloid scintigram demonstrating a normal liver and spleen, but some activity in the left hemi-scrotum.

limb⁶ and orofacial malformation – more likely in the continuous form.

Often, the definitive diagnosis is made postoperatively by histology and orchidectomy is not necessary as the splenic tissue can be dissected off the testicle.

Surgeons should be aware of this important but rare diagnosis. The use of frozen section may be useful in distinguishing between splenogonadal fusion and primary testicular and para-testicular neoplasms. The ultimate aim should be preservation of healthy testicles.

References

1. Carragher AM. One hundred years of splenogonadal fusion. *Urology* 1990; **35**: 471–5.
2. Walther MM, Trulock TS, Finnerty DP, Woodard J. Splenic gonadal fusion. *Urology* 1988; **32**: 521–4.
3. Akbar SA, Sayyed TA, Jafri SZH, Hasteh F, Neill JSA. Multimodal imaging of para testicular neoplasms and their mimics. *Radiographics* 2003; **23**: 1474–5.
4. Putshar WGJ, Marion WC. Splenic-gonadal fusion. *Am J Pathol* 1956; **32**: 15.
5. Andrew RW, Copeland DD, Fried FA. Splenogonadal fusion. *J Urol* 1985; **133**: 1052.
6. Miceli AB. Splenogonadal fusion: a rare cause of a scrotal mass. *Br J Urol* 1994; **74**: 250.