Clinical Section

A SCROTAL DIMPLE IN TESTICULAR TORSION

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An unusual physical sign in a case of torsion of the testis in a 13-year-old boy has prompted me to enquire into the mechanism of its causation. This sign, demonstrated in Fig. 1, is a dimpling of the scrotum, and does not appear to have been reported previously. There is also a difference of opinion about the actual causation of the enlargement of the scrotum in testicular torsion. Causes mentioned by some are: (*a*) enlargement of the testis with or without

Fig. 1. Showing the scrotal dimple.

secondary hydrocele, or (*b*) oedema of the scrotal layers. Others invoke both these factors.

Venous Drainage

Venous drainage of the scrotum is *via* the pudendal veins — superficial, deep and internal—and the cremasteric veins. Venous drainage of the testis is classically described in standard anatomy books as being *via* the pampiniform plexus, but Robb[1] has described collateral channels *via* the pudendal and circumflex veins anastomosing with this plexus. He mentioned that these collaterals might be damaged during an operation for varicocele, when this is carried out in the inguinal canal. Harrison and Barclay,[2] in a detailed study of the venous drainage of the testis, made no mention of any such anastomosis near the testis itself. One concludes therefore that these venous communications take place at a considerably higher level.

For scrotal oedema to occur, the scrotal veins must be involved. This could occur only by obstruction of the anastomosing channels, either by torsion at a high level or by retrograde venous thrombosis. In the extravaginal type of torsion both mechanisms are possible, in the intravaginal only retrograde thrombosis is possible.

Scrotal Anatomy

To explain the dimpling of the skin, one must refer briefly to the anatomy of the scrotum. The skin is adherent to the dartos muscle and both move freely over the underlying layers. The septum is composed of the layers of each chamber fusing in the midline and reinforced by the muscle fibres of the dartos. The skin takes no part in the formation of the septum, passing uninterruptedly across the midline. When the gubernaculum disappears, it becomes continuous with the layers of the scrotal wall, but not the skin.

Explanation of the Dimpling

The dimpling could be explained on the following basis: Oedema *per se* cannot be responsible for the sign, for it has never been reported in epididymo-orchitis, which is an extremely common cause of scrotal oedema. The site of the dimple is midline, where the skin is attached through the dartos to the septum. This is in turn anchored to the root of the penis. In extravaginal torsion, twisting of the cord of necessity causes it to shorten. Since its covering layers are continuous with those of the scrotum and septum, traction is applied and is apparent at the point where the septum is attached to the skin. In intravaginal torsion, since cord coverings are not involved, this mechanism cannot apply. If dimpling does occur, the surrounding oedema will make it appear more prominent.

Torsion is a rather uncommon condition, as is shown by the fact that Gross,[3] in 15 years at the Boston Children's Hospital, only succeeded in collecting 20 cases. The intravaginal variety exceeds the extravaginal in frequency.

The case mentioned here is an example of the extravaginal type (Fig. 2). The intravaginal torsion is, as discussed, less likely to produce oedema, and cannot produce traction on the coverings of the cord, both factors which operate in the production of dimpling. It is only in the extravaginal type of case that one would expect this sign, since both factors are likely to be present simultaneously.

Fig. 2. Showing the extravaginal torsion.

Is this Sign Commonly Seen?

It will be interesting to observe whether others have noted this sign. If so, it may usefully be employed in the diagnosis of a condition which is at times difficult to distinguish from epididymo-orchitis. In cases of suspected testicular torsion, the attention of clinicians may be focussed on it and its incidence assessed.

REFERENCES

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3. Gross, R. E. (1953): *The Surgery of Infancy and Childhood*. Philadelphia and London: W. B. Saunders.