TORSION OF THE TESTIS

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The diagnosis of torsion of the testis is notoriously difficult, and many cases are missed at the early stage when treatment may save the organ. Diagnostic errors are made simply because practitioners and surgeons are not familiar with the condition or do not bear in mind this possibility.

There is no doubt that many cases of testicular torsion are misdiagnosed as acute epididymitis and time is lost in the ineffectual treatment of an inflammatory condition. When the correct diagnosis is made, the testis is found on exploration to be infarcted and has to be removed. Alternatively if not explored it undergoes gradual complete atrophy. Early diagnosis and treatment can prevent these disasters. O'Connor (1933) questioned all patients he saw who had atrophied testes and came to the conclusion that torsion was quite common. Riba and Schmidlapp (1946) estimate that 75% of twisted testes are lost, and state that it is better to explore a case of epididymitis than miss a case of torsion.

Aetiology

Muschat (1932) investigated the mechanics of testicular torsion and came to the following conclusions :—

1. It is doubtful if extravaginal torsion can occur.
2. A normal testis cannot undergo torsion because of the attachment of the epididymis to the scrotum.
3. The principal predisposing cause of intravaginal torsion is an abnormal investment of the epididymis and lower part of the cord by the tunica vaginalis.
4. The principal exciting cause is contraction of the cremaster muscle.

In the normal testis the tunica vaginalis does not cover the posterior surface of the epididymis which is directly attached to the wall of the scrotum. In all cases of torsion of the fully descended testis it will be found that the tunica vaginalis invests with a visceral layer not only the whole epididymis but also the lower part of the cord, so that the testis and

epididymis dangle within the cavity of the scrotum like a bell clapper.

As well as the abnormality of tunical investment, there may be an alteration in the normal relationship of the testis and epididymis. The mesorchium is elongated so that the testis and epididymis are separated. This gives rise to a broadening of the lower end of the cord, the vas entering along one side and the vessels along the other. The testis may even be completely inverted, hanging from the epididymis so that its upper pole becomes the lower. These deformities are usually present in the undescended testis, probably accounting for the frequency of torsion in the cryptorchids.

Muschat constructed a model from serial sections of the cord in a case of torsion and discovered that the cremaster muscle fibres descended spirally instead of in a series of loops. He suggested that contraction of the cremaster would therefore tend to rotate the testis and the cord.

Most writers are agreed as to the underlying predisposing deformity though some include additional features such as an absent gubernaculum or an abnormally large scrotum. Ottenheimer and Bidgood (1933) recommended resection of the redundant part of the scrotum.

The direction of the twist is usually from without inwards.

Frequency

The incidence of testicular torsion is, for reasons given, greater than would appear from a review of the literature. Even so it is not a common condition. Wheeler and Clark (1952) collected nine cases in 40,000 hospital admissions. Ewert and Hoffman (1944) found 489 case reports in the literature. Eight cases have been collected from the records of the Middlesex Hospital since 1948.

Approximately 50% of cases of torsion occur in cryptorchids and as the frequency of undescended testis is 0.1% of all males this is a predisposing factor.

Kennedy (1948) states that only 5% of cases suffer bilateral torsion.

Guice (1954) recorded a case of torsion of an abdominal testis and stated that this was the thirteenth example. In five of these cases the testis contained a malignant tumour. Malignancy was also discovered in scrotal testes removed by Mohardt (1943) and by Babcock (1916) because they had undergone torsion. Popov (1955) described an interesting case of torsion of an inguinal testis in a female intersex. Boggan (1933) reported torsion of a supernumerary testis.

Diagnosis

Age. Torsion of the testis occurs most commonly between the ages of ten and twenty-five years and this fact should help in diagnosis. It has been recorded at birth by Biorn and Davis (1951) and at the age of four hours by Taylor (1897). Many cases in the sixth and seventh decades have occurred.

Symptoms and Signs. There are two modes of presentation of the typical case of testicular torsion. Those with an acute sudden onset and those with recurrent symptoms.

The Acute Type. There is a sudden, very severe pain in the affected testis, frequently following some minor physical exertion, though often occurring during sleep. The pain rapidly increases in intensity, and may spread to the groin and lower abdomen. This may be associated with vomiting and collapse. If left untreated it usually subsides after 48 hours. Shortly after the onset there is swelling of the testis which increases with time and persists when the pain has disappeared. On examination the testis is enlarged, hard and excruciatingly tender. It is lying in the upper part of the scrotum and the cord is thickened. In the early stages it may be possible to palpate the epididymis and it will be found in an abnormal position unless the torsion has been through 360 degrees. Later, the scrotal skin becomes red and oedematous; the oedema spreading to involve the skin of the penis and prepuce. It is important to note that in most cases there is complete absence of urinary symptoms suggestive of an inflammatory condition, and that examination of the urine will show that it is normal. The important features in differentiating torsion from epididymitis are:—

1. The sudden onset of very severe testicular pain in an adolescent or young man unaccompanied by urinary symptoms.
2. The swelling of both testis and epididymis which will be found lying transversely in the upper part of the scrotum.
3. The epididymis is in an abnormal position.
4. The thickening of the whole cord.

Epididymitis is not common in young boys, though the possibility of mumps orchitis must be excluded.

The Recurrent Type. There will have been recurrent episodes of testicular pain and swelling every few months or years which have subsided after a short period of bed rest or a hot bath. The final attack which brings the patient to his Doctor fails to respond to these measures. The physical signs will be the same as in the acute variety. Van der Poel (1895) described a patient 25 years old who had attacks for three years and during that time learnt to untwist his testis himself. Many other cases have been reported. One patient seen by the author was 53 years of age and had suffered from attacks of testicular pain every eighteen months to two years since the age of fifteen.

Aids in Diagnosis. Prehn (1934) described a sign which is known by his name. If elevation of the affected testis relieves pain the patient is probably suffering from epididymitis, whereas if the pain is increased, torsion is more likely. One of the patients described by him was coincidentally suffering from gonococcal urethritis. Some authors confirm the value of this sign, though the impression is that it is present in only half the cases.

Smith (1953) suggests infiltrating the spermatic cord with local anaesthetic, so rendering the testis sufficiently anaesthetic to allow easier palpation.

Kindall and Nickels (1948) found that in epididymitis there was an early rise of the E.S.R. which did not occur in torsion.

Difficulties in Diagnosis. Many authors have described cases in which torsion of the testis has occurred in patients found to be suffering from gonococcal urethritis. The testis was explored either because the symptoms and signs were more suggestive of torsion than epididymitis or because the condition failed to respond to conservative treatment.

Torsion which occurs after trauma to a testis probably presents most difficulties in diagnosis as the appearances can be ascribed to the trauma. In most cases, however, the trauma is not severe enough to produce the acute pain and swelling which is present and careful palpation will reveal that the epididymis and testis are not in their normal position.

A diagnosis of testicular torsion has been made when some other condition was present. Gowans (1953) reports a patient with symptoms and signs suggesting torsion following a fall. Surgical exploration revealed a normal testis, a funicular hernial sac and a traumatic rupture of the terminal ileum.

Torsion of the Undescended Testis. This is usually in the inguinal region but may be in the abdomen. Symptoms and signs in the former closely resemble a strangulated hernia though the absence of signs of intestinal obstruction and an empty scrotum on the affected side should raise suspicions.

If a patient complains of abdominal pain and is found to have one or both testes undescended, the diagnosis of torsion of an abdominal testis should be considered.

Atypical Cases. A few cases have been recorded in which the presentation has not been characteristic. Pain has been very slight or absent and the patient has sought medical advice because of testicular swelling. In most of these instances the diagnosis has been made only after surgical exploration. There must be many more cases of this type which received no treatment and the testis atrophied without benefit of diagnosis.

The physical signs found on examination are the same as in the typical cases though tenderness may be slight or absent.

Treatment

Manual untwisting is recommended by Smith (1934) and is of value if the patient is seen outside hospital. If successful it will also prove the diagnosis. As rotation is usually from without inwards, first attempts at untwisting should be from within outwards. If this increases pain, rotation in the opposite direction should be tried. When these manipulations are successful there is sudden complete relief of pain and the swelling rapidly subsides. Owing to the likelihood of recurrence the testis should be fixed in the scrotum by operation later. Some patients have, however, refused this advice as they were apparently cured by the manipulation.

Provided the patient can be sent to hospital quickly once the diagnosis is made, time should not be wasted in attempts at manipulation. Early exploration through a scrotal incision will confirm the diagnosis and allow the testis to be completely untwisted. If it is still viable it should be anchored, after resecting the tunica vaginalis, by suture to the wall of the scrotum. Operation must be performed within six to eight hours of onset if

the testis is to be saved. In cases of bilateral torsion or when the opposite testis is absent it is worth preserving even an apparently infarcted organ as some of the interstitial cells may retain their function.

As bilateral torsion occurs in only 5% of cases, there is no indication for exploring the opposite testis unless there have been previous recurrent attacks of pain. The patient should be informed about the nature of the condition for which he has received treatment so that if there is a similar episode affecting the untreated side at some time in the future, he will seek medical attention immediately.

The opposite testis should always be carefully examined and if it feels unduly mobile, it should be explored and anchored in the scrotum.

Summary

The aetiology, frequency, diagnosis and treatment of torsion of the testis is described.

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