

us all possible help and cooperation all through. We also wish to express our gratitude to Professor E. Stengel for his advice and criticism.

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Torsion of the Testis: a Review of 58 Cases

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Torsion of the testis is not uncommon in urological practice as a whole. The condition, however, is not often seen by the general practitioner, and consequently diagnosis may be delayed and early operation not always achieved. This paper presents the results obtained from current methods of diagnosis and treatment, with special reference to the problem of early diagnosis. Fifty-eight consecutive cases operated on during 1948–64 following the diagnosis of torsion of the testis have been reviewed and contrasted with a similar consecutive number of cases of acute epididymo-orchitis, as the latter provide the main problem in diagnosis.

Aetiology

Torsion usually occurs in an imperfectly descended testis. In some cases this failure of descent is obvious, but more commonly, though the testis may seem to be well placed in the scrotum, it has failed to settle completely and attain fixation. The posterior borders of the testis and the body of the epididymis, instead of consolidating with the posterior scrotal layers, are left with a complete investment of tunica vaginalis, forming a mesentery or mesorchium for the testis. The terminal part of the spermatic cord may also have an abnormal complete investment of tunica, causing an intravaginal testis to hang supported on a narrow pedicle. The anatomical defect is developmental, usually bilateral, and occasionally familial (Jones, 1962).

In only 30 of the 58 cases were detailed descriptions given of the anatomical condition found at operation, but 28 of these had a voluminous tunica, 26 had a long intravaginal cord, and 24 had a well-developed mesorchium. This mobility of the testis is thought to allow a twist, which is initiated by the cremaster and often associated with minor effort. It is of some interest that approximately half the cases in this series occurred in the spring.

Clinical Features

The clinical aspects of torsion in the cases reviewed bore a marked resemblance, and several features of diagnostic importance emerged. Torsion of the testis is described in the newborn, when it has to be differentiated from trauma and infarction, but the common age of incidence is in older children and young adults. In the present series the average age at torsion was 16½,

with a range of 4 to 69 years, and most of the cases (70%) occurred in the 13 to 18 age group. This contrasts clearly with acute epididymo-orchitis, which falls into an older age group, cases being far more common over the age of 25 (Fig. 1).

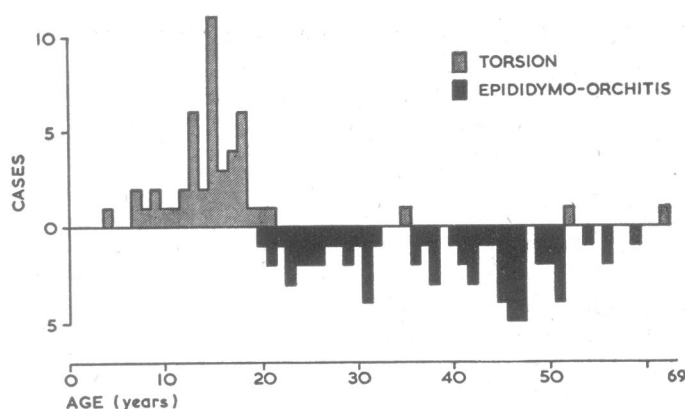


FIG. 1.—Differing age incidence of torsion of the testis and acute epididymo-orchitis.

The presentation of torsion was found to be fairly constant, with the sudden onset of pain in the testis, groin, or lower abdomen, usually but not always severe, and associated with nausea but not commonly vomiting. Urinary symptoms were absent in all cases. In contrast, the pain in epididymitis was slow in onset, and most of the patients (75%) admitted to urinary symptoms, often noting them before the onset of pain.

On examination the temperature was raised in only 20% of cases of torsion, the average finding being 98.8° F. (37.1° C.). A raised temperature was more commonly found in epididymitis (95%), and the average reading, 100.4° F. (38° C.), was much higher. Pain and tenderness usually precluded accurate palpation, but after torsion the testis was sometimes noted to be high in the scrotum. Rapid swelling of the testis and scrotum, with early scrotal oedema and later redness of the skin, were often found in torsion. This oedema and inflammation of the scrotum was not noted in the early stages of acute epididymo-orchitis. The relief of pain afforded by elevation of the testis in epididymitis was not found helpful in distinguishing cases of torsion.

Diagnostic aids, such as aspiration of hydrocele fluid and examination of the urine, were of some help, but in the presence

of the above history and examination the findings were never allowed to delay operation. Among 20 cases of torsion in patients under the age of 18 aspiration revealed blood-stained hydrocele fluid in 16 and clear or turbid fluid in four: this investigation thus gave a false negative in 20%. Examination of a mid-stream specimen of urine showed cells or organisms in all cases of epididymitis, whereas 20 cases of torsion all produced a sterile urine.

Recurrent Torsion.—This is a definite entity. Of the patients reviewed fully a quarter admitted to similar previous but less severe attacks of testicular pain. Of six cases seen in the out-patient clinic with a history of recurrent attacks of pain in the testis and groin five showed the characteristic developmental defect at operation.

Diagnosis and Treatment.—Under general anaesthesia a direct scrotal approach immediately gave the diagnosis (Fig. 2). If the testis was viable, untwisting and bilateral fixation was performed. If the testis was gangrenous, orchidectomy and fixation of the contralateral testis was carried out.

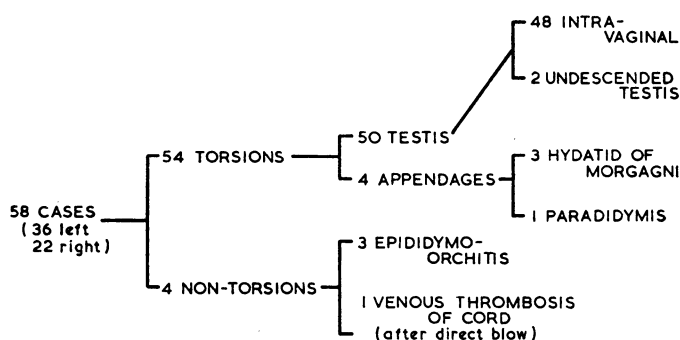


FIG. 2.—Findings at operation.

Results

The early results are shown in Fig. 3. It will be seen that orchidectomy was necessary in 36 cases (72%). In all cases

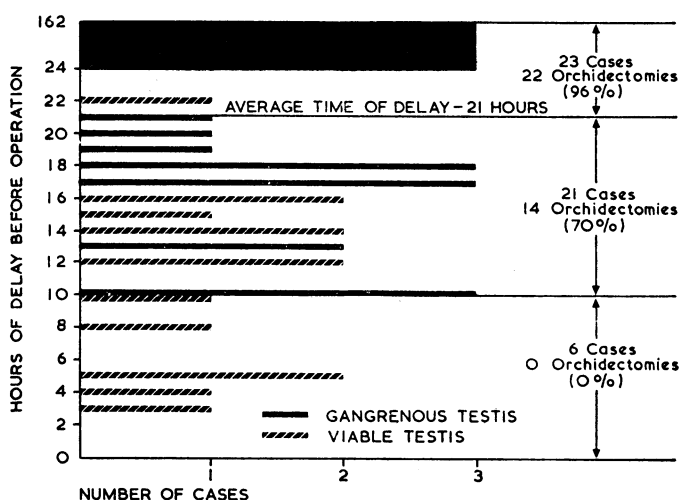


FIG. 3.—Effect of operative delay on viability of the testis.

operated on inside 10 hours the testis was saved. With a history up to 21 hours, the average length in this series, 70% of the cases required orchidectomy, while of those with a history of over 21 hours 96% lost the testis.

The late results were assessed two years or more after the operation by a clinical examination determining the size, consistency, and sensation of the affected testis. This revealed

atrophy or apparent functional loss in a further four cases, giving a final overall result of 80% of testes lost after torsion.

Of the cases diagnosed as epididymitis there was subsequent atrophy of the testis in 6%, and it is probable that these were cases of torsion which had been missed. All these patients were under 25 years of age.

Discussion

The results in torsion of the testis are not good, and a survey of the literature (see References) suggests that 90% of cases of torsion end in gangrene and subsequent loss of the testis. The results in the present series follow this trend, and it can be seen that success or failure is closely related to the period over which the testis has been ischaemic and the speed with which operative relief is obtained.

In the cases reviewed the average length of the history from onset of pain to operation was 21 hours, which precludes a good result. This delay cannot be ascribed to the patient, as he almost always seeks medical help quickly after the occurrence of torsion, but it is largely due to the initial conservative treatment which is tried before the nature of the condition is realized.

The diagnosis should be under suspicion, as torsion is so often the answer when one is presented with an acutely painful and swollen testis in a young adult. The differential diagnosis from acute epididymo-orchitis, and, less often, from torsion of the appendages of the testis and traumatic haematocoele, and rarely from venous thrombosis of the cord is not reliable and may be difficult.

It is therefore our policy, and we would strongly urge, that the diagnosis of an acutely painful and swollen testis with sudden onset of symptoms in those under the age of 18 should be made at operation when the testis is exposed. Operation may be required in older age groups when there is doubt about the diagnosis, but it should be carried out on all adolescents, where the incidence of torsion is high.

Summary

The diagnosis and results of treatment of torsion of the testis are reviewed in a series of 58 patients and a comparison is made with a similar series with acute epididymo-orchitis.

The aetiology, clinical features, and treatment are discussed and factors of diagnostic help pointed out. The results, which are disappointing, are shown to depend on the speed with which operative relief is obtained, and, with this in view, it is urged that the diagnosis of the acutely painful, swollen testis in all patients under the age of 18 years should be made at early operation.

Recurrent torsion is a definite entity and should always be suspected when similarly distributed pain, though not as severe, occurs in the same age group.

We wish to thank Mr. W. H. Graham for permission to review these cases, which have all been under his care.

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