CLINICAL ASPECTS OF NEOPLASM OF THE TESTIS, AND CASE REPORTS.

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Six cases of neoplasm of the testis, a condition sufficiently rare to present difficulties in diagnosis, have been encountered in a short time. This series furnishes many interesting features which are described more from the clinical than the pathological aspect.

Case 1.—Fusilier, aged 22.

This patient noticed increase in size, and only occasionally a dull ache, in the right testis over a period of eight weeks. The testis was the size of a duck's egg with a smooth surface, solid consistency and it was heavy. Specific testicular pain was present though diminished. The cord was not thickened. There was no clinical or radiological evidence of metastases. The cord was divided after traction at the internal abdominal ring and orchidectomy completed (H. S. S.). The tissue bulged out of the tunica when the testis was cut and it looked like normal testicular tissue although the organ was enlarged three or four times. There were one or two small areas of degeneration visible in the cut surface. Histology showed the homogenous appearance of a seminoma throughout the specimen.

Case 2.—Lieutenant, aged 25.

This patient noticed increase in size of the left testis for only two weeks and experienced no pain. There was a swelling the size of a bantam's egg in the region of the globus major, of irregular surface, craggy consistency and extending upward to the thickened cord. There was no clinical or radiological evidence of metastases. The testis was explored and orchidectomy performed, the cord being divided at the external abdominal ring (W. E. M. M.). The tunica albuginea and epididymis around the sinus pocularis were normal in appearance. On section a mass of grey tissue was seen involving the rete testis and extending upwards medial to the globus major and forwards slightly into the upper pole of the testis. The major part of the testis was normal. Histology revealed an adenocarcinoma of a highly malignant type and the vas was involved.

Case 3.—Private, aged 20.

This patient was seen by one of us (H. S. S.) with a solid swelling of the left testis, the size of a goose's egg with smooth surface and solid consistency. It was heavy and specific testicular sensation was absent. There was no clinical or radiological evidence of metastases. The previous history, extending over a period of weeks, was of swelling of the testis following trauma. Two aspirations had been performed, withdrawing apparently normal blood. Orchidectomy was performed (H. S. S.) and the testis on section showed complete replacement by hæmorrhagic and degenerated growth. Histology showed the typical appearance of a seminoma.

Case 4.—Gunner, aged 30.

This patient had a symptomless swelling of the right testis, present for five years. It was the size of an orange with nodular surface and stony hard consistency. Specific testicular sensation was absent. The epididymis was not palpable and the cord was slightly thickened. X-ray of the swelling showed a large calcified mass of racemose pattern but organized structures were absent. The cord was divided at the internal ring and orchidectomy performed (H. S. S.). The upper two-thirds of the specimen was a tumour mass which distended the tunica and the lower third was normal testicular tissue. The predominant tumour tissues were hyaline cartilage and fibrous tissue but there were areas of calcified cartilage and calcareous deposits with small trabeculæ of true bone and a few ill-defined acinar structures were present. The pathologists' opinion was that histologically there was no evidence of malignancy but it could not be excluded that a pre-existing malignant focus had been obliterated by calcification after the establishment of metastases which at this time were not clinically or radiologically manifest. It was labelled a teratoma of non-adult type.

Case 5.—A.B., aged 30.

This Maltese rating had felt pain in the left testis, which was ectopic in the superficial inguinal pouch at the external abdominal ring, but no increase in size was noticed. This testis was slightly larger than its normally descended mate and specific testicular sensation was present. There was no clinical or radiological evidence of metastases. The testis was removed and the cord divided after traction at the internal abdominal ring (H. S. S.). The testicle was of average size and on section showed areas of degeneration which were histologically seminoma tissue. At the time of operation it was impossible to arrange deep X-ray therapy and the patient was returned to duty until summoned for review one year later. A fixed nodular retroperitoneal mass was palpable just to the left and above the umbilicus. X-ray of the chest was negative. Deep X-ray therapy was arranged.

Case 6.—F.M., aged 28, single.

Admitted complaining of pain and swelling in the left testicle of three weeks' duration. No trauma. He had had bilateral orchidopexy when aged 16. The testicle was sprung firmly just below the external ring, was smooth, tender, hard and normal in shape, but slightly larger than the apparently normal right testicle. Specific testicular pain was not obtained over and above common acute pain. There was no clinical or radiological evidence of metastases. Orchidectomy was performed and the cord cut at the external ring (G. K. H.). The epididymis was found strung out from the testicle as with an undescended testicle. There were areas of hæmorrhage in otherwise homogenous testicular tissue, surrounded by a thick tunica. Histology showed seminoma tissue with cord involvement.

Clinical Analysis.

The history is short in this series (two weeks in Case 2) except for Case 4 which is a case apart.

The size of the swelling varies enormously being small in Cases 5 and 6, which are examples of malignancy supervening on imperfectly descended organs, and relatively large in Cases 1 and 3 where increase in size has been the presenting feature.

The notable fact in Case 1, where the testis was replaced entirely by growth, was the persistence of specific testicular sensation. On the other hand a portion of normal testis remained at the lower pole in Case 4 yet specific testicular sensation was absent. This suggests that the condition of the nerve fibres in the region of the rete testis is an important factor in determining the maintenance of specific testicular sensibility.

Invasion of the tunica vaginalis did not occur in any of these cases, the tunica albuginea forming a dense barrier with the weakest part at the rete testis, through which spread the disease in Case 2. Even in Case 3 where blood was aspirated there was no spread through the tunica albuginea and it is likely that the blood was drawn from the insensitive testis destroyed by malignant disease. It seems more common for the surface of a neoplastic swelling of the testis to be regular in contour than otherwise.

Thickening of the cord is noted in two cases but this sign was of doubtful help in diagnosis. A common cause of a thickened cord is hypertrophy of the cremaster which occurs with any chronic testicular enlargement. Should nodularity be felt this feature is diagnostic of malignant disease.

Cases 5 and 6 record the development of malignant disease in imperfectly descended testes, ectopic in Case 5 and high scrotal in Case 6, the latter having had orchidopexy performed twelve years previously. The presenting feature in both these cases was the spontaneous onset of pain and when the testis was felt it was found larger than its mate. This definite though small enlargement was striking in Case 5 where this ectopic testis was larger than the normally descended right testis. Both these testes contained areas of recent hæmorrhage which had presumably caused pain by sudden distension of the tunica albuginea. When pain and the smallest enlargement of an imperfectly descended testis are present the possibility of malignant disease makes early orchidectomy advisable although subacute torsion of the testis may make preoperative diagnosis difficult.

Case 3 illustrates the danger of confusing the diagnosis with acute traumatic hæmatocele. Unless the injury is sufficiently severe to cause immediate swelling and bruising which resolve

in a week or two, malignant disease must be considered in a rapidly growing swelling of the testis and operation is warranted.

Case 4 gave no history of trauma and the diagnoses considered were calcified spontaneous hæmatocele and calcification in a teratoma of low grade or non-malignancy. In either case the organ would be destroyed and orchidectomy was justified.

It is repeated in these cases that there was no clinical or radiological evidence of metastases. This is done to emphasize the fact that, although there may be no Osler's tumour, no enlarged Virchow gland in the left supraclavicular fossa, no enlarged inguinal glands in a case previously subjected to orchidopexy with scrotal fixation by sutures (such as one of us (H. S. S.) has seen), and no X-ray evidence of lung secondaries still, without examination of the urine for gonadotrophic content, metastases cannot be eliminated. It has not been possible to perform a Frank, Aschheim-Zondek or Friedman test on the urine of these cases.

A short history of pain or enlargement of a testicle in the absence of inflammation or gross trauma is the main feature in the diagnosis of malignant disease. "Weighing" the testicle has not been found useful. Secondary hydrocele has not been encountered in this series. Specific testicular pain may or may not be present in a neoplasm of the testis and this sign can be of little value in the differential diagnosis from gumma in which condition, indeed, testicular sensibility is not invariably lost.

Discussion.

The differential diagnosis of a tumour of the testis may invoke almost all possible pathologies but, if the more common ones, viz. chronic epididymitis, torsion, gumma, chronic hæmatocele (traumatic, spontaneous or calcified) be considered, the history of onset, physical and serological examinations, urinalysis and radiology should make preoperative diagnosis possible. If there is still doubt it is likely that in any case the local disease should be eradicated or that the testis is functionless. It would be wrong to ignore the principle of cancer surgery that the lymphatics and vessels be obliterated before the growth is tackled and such is the sequence of events if the operation is exploratory. It is considered that the decision to perform orchidectomy should be made before operation, then the cord divided after traction at the internal ring, and orchidectomy completed.

Cabot and Berkson [1] have shown that the outlook for patients with a testicular tumour is not hopeless, even in the presence of metastases. These workers advise orchidectomy followed by deep X-ray therapy whether metastases be present or not. They show that 50 per cent of the patients who had seminomas without metastases survived ten years or more and that 37·5 per cent survived for a similar period even though a metastasis was present at the time of orchidectomy. Every effort has been made in this series to obtain X-ray therapy after orchidectomy and it is hoped that some of these patients will remain in the Services.

The importance of a knowledge of the gonadotrophic content of the urine may well be exemplified in Case 4. It appears from the findings that the tumour may be simple. However, a case is quoted by Prym [2] in which spontaneous healing or regression of a primary testicular tumour occurred, with death of the patient later from chorion-epithelioma metastases. It seems right to consider this possibility in Case 4 and it has been arranged that X-ray therapy will be given this patient when and if his urine contains "prolan."

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