Frequency of So-Called Hypoplastic or Dysgenetic Zones in Scrotal and Otherwise Normal Human Testes*

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Hypoplastic zones are by definition circumscribed groups of small coiled up tubules which are filled with a syncytial cellular layer. The nuclei of these cells are radially placed, either oval and containing little chromatin and no clearly visible nucleolus, or oblong, slender and strikingly rich in chromatin. The syncytium is bound by the basement membrane and the tunica propria of the tubules containing fibroblasts, collagen fibres and some scarce elastic fibrils (Fig. 1).

Such zones are considered to be an effect of a testicular malformation as they particularly concern cryptorchid testes (Kochenburger, Lacène and Chevassu, Sohval, recent summaries by Guillemin and Johnston). These authors point out that all transitions from a single hypoplastic tubule to the "adenoma-like" proliferations occur. These lesions were given various names as hypoplastic tubules, dysgenetic zone or tubular adenoma. In the recent literature these areas or zones are even defined as focal hyperplasia of Sertoli cells (Collins and Symington) or Sertoli cell tumor.

Hypoplastic zones were also described in some cases with scrotal and otherwise completely regular testes (Hedinger and Plattner, Plattner, Halley). Therefore, to get an idea about the occurrence and the frequency of these hypoplastic zones we controlled a large series of macroscopically normal and descended testes.

Material and Method

Our investigation includes 124 selected autopsy cases of the departments of pathology of Basle, Lucerne, Winterthur and St. Gall (Switzerland). It concerns male subjects from 15 to 39 years of age who died by accidents, suicide or severe systemic diseases. There were no pathological changes in the endocrine system, neither clinically nor at autopsy. The testes of all the 124 cases were regular and descended. All the testes were fixed in formalin 4% and cut into 8 slices about 5 mm thick. Every second slice was embedded in paraffin and stained with H.E., Elastin-Weigert, PAS and van Gieson. Thus we examined at least 16 cross-sections of every single testis. If a hypoplastic zone was doubtful, we investigated the adjoining areas by serial sections.

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Results

In a total of 124 analyzed pairs of testes we found 27 cases with hypoplastic zones. In 7 cases both sides were affected, in 20 cases only one side. If we classify the investigated material according to age we get the picture displayed in Fig. 2. The frequency of hypoplastic zones diminishes with increasing age. We could not find any hypoplastic zone at all in the testes of 22 men from 35 to 39 years old. Older men are not included in our investigation.

6 of the 7 cases with bilaterally affected testes concerned young subjects from 15 to 19 years, the seventh being 25 years old. The testes of 3 men between 20 and 32 years showed doubtful hypoplastic zones which we did not consider as the findings were not convincing even after revision by serial sections.