

HISTOPATHOLOGIC FINDINGS IN 848 TESTICULAR BIOPSIES OF INFERTILE MALES

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Abstract - 848 testicular biopsy slides of 664 infertile men were reviewed from the archive of Jihad Daneshgahi pathology Center. The mean age of patients was 33 years. Bilateral testicular biopsies were performed in 197 cases. In 47 cases (23.9%) the histopathologic findings were not identical. Mixed pattern were encountered frequently which must be kept in mind in pathologic evaluations and reports.

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Key Words: testicular biopsy, infertility

Jihad Daneshgahi Pathology Center. In addition to routine hematoxyline and eosin stain sections from each paraffin blocks were cut at 4 μ m and stained for reticulin and trichrome for evaluation of basement mambrane thickness, interstitial hyalinization and fibrosis.

Microscopic features included size and number of seminiferous tubules, central lumen diameter, germinal epithelium and its stage of maturation, Sertoli and Leydig cell ratio, thickness of basement mambrane and vascular walls, interstitial tissue and presence of inflammatory cells.

INTRODUCTION

Among infertile couples in whom a causative factor can be assigned the man is wholly or partially responsible for 30-50% cases, in the general population 5-10% of married men (3-4).

The cause of male infertility fall into one of three categories, (6-8) pretesticular, testicular and post testicular. The pretesticular causes are extragonadal endocrine disorders, testicular causes are primary disease of testes. The post testicular causes consist mainly of obstruction of ducts leading from the tests.

The evaluation of infertile male includes a thorough clinical history and examination, semen and hormonal analysis, quantitation of leukocytes in semen and search for antisperm antibodies (2). Additional tests such as venography and testicular biopsy are performed in selected cases (1).

Testicular biopsy in infertile men was first advocated by Chrny in 1940 (4). But the use of it as a diagnostic procedure has not been universally accepted. Some physicians reserve biopsy for azoospermic men to help differentiate primary testicular failure from obstruction, but since neither clinical examination nor semen analysis is a useful guide to the severity of testicular lesions, most physicians believe that biopsy offers a guide to prognosis and treatment in oligospermic as well as azzospermic men (5).

MATERIALS AND METHODS

848 testicular biopsy slides of 664 infertile men were reviewed from the archive of Iran Medical University,

RESULTS

The age of patients ranged from 18 to 67 years with mean age of 33 years (SD = 6.6).

The age group in which the maximum number of testicular biopsies were performed was from 31-40 years.

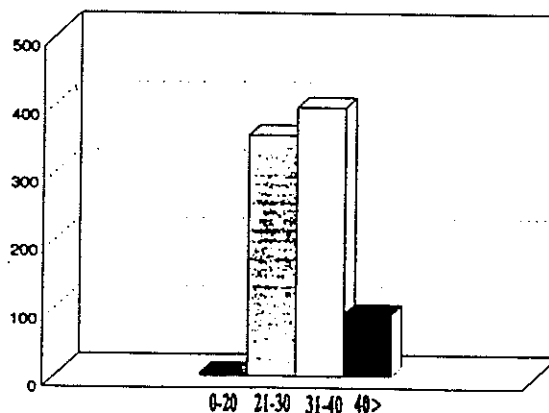


Fig. 1- Age groups

In 497 cases (58.6%) biopsies were performed on the right testis, and in 351 cases (41.4%) on the left. Bilateral biopsies were performed only 197 of the total 664 patients. In 150 cases (76.1%) the histopathologic findings were identical, but in 47 cases (23.9%) they were not.

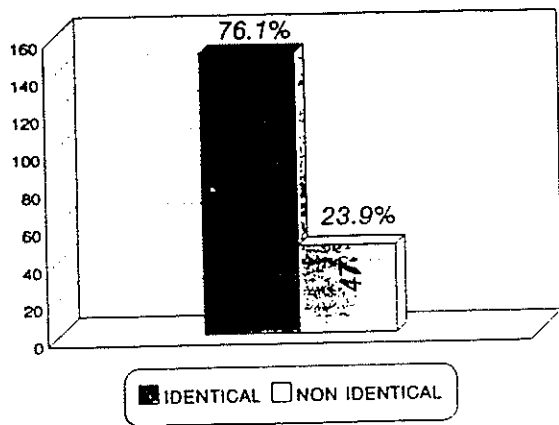


Fig. 2- Bilateral testicular biopsies

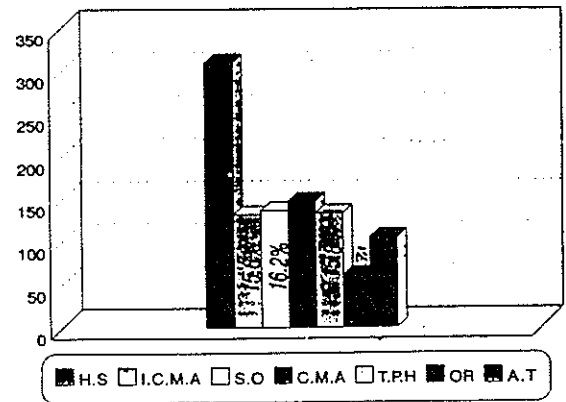


Fig. 4- Microscopic findings in all cases

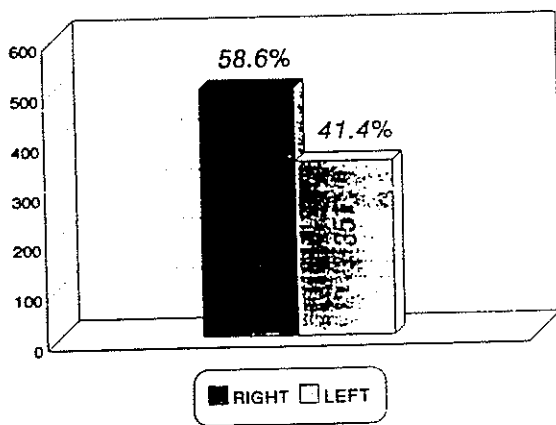


Fig. 3- Side of specimens

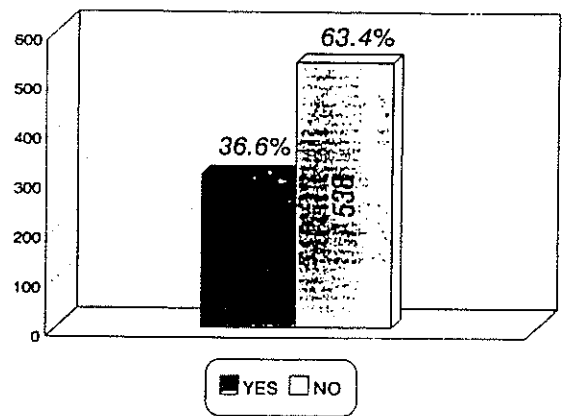


Fig. 5- Hypospermatogenesis

The microscopic findings are demonstrated in figure.

Hypospermatogenesis

The mean age of patients with this diagnosis was 32.4 years (SD = 6.6). It was seen in 310 cases (36.6%).

In these groups sloughing of mild (4.5%), moderate (5.2%) and severe degree (20.4%) was observed.

Basement mambrane thickening was mild in 5.1% and moderate in 3.8%.

Moderate Leydig cell hyperplasia was present in 3.2% and severe hyperplasia in 0.9%.

Incomplete maturation arrest

The mean age of this group was 32.2 years. (SD = 6.0) it was seen in 132 cases 15.6% (Fig. 6)

Sloughing was mild in 7.7%, moderate in 0.8% and severe in 8.4% of these cases.

Moderate Leyding hyperplasia was observed in 1.3% and severe hyperplasia in 0.7% .

Sertoli cell syndrome

The mean age in this group was 32.6 years. (SD = 6.0)

It was observed in mild 137 cases (16.2%).

Basement mambrane thickening was mild in 5.1% and moderate in 3.8%. Moderate Leydig cell hyperplasia in 3.8% and severe in 20% of this group were found.

Complete maturation arrest

The mean age in this group was 32.7 years (SD = 6.0).

Histopathologic findings in ...

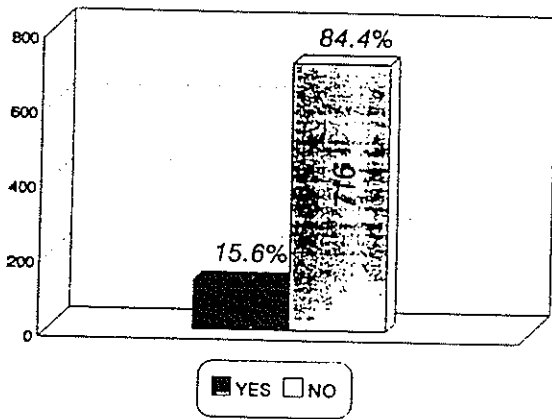


Fig. 6- Hypospermatogenesis

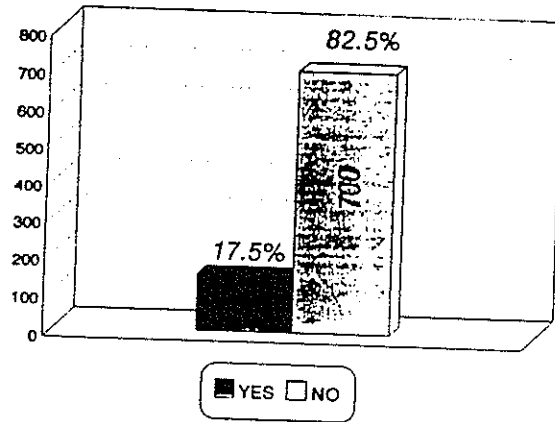


Fig. 8- Complete maturation arrest

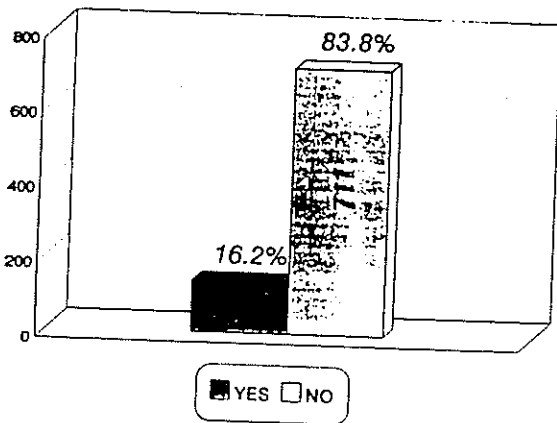


Fig. 7- Sertoli cell only syndrome

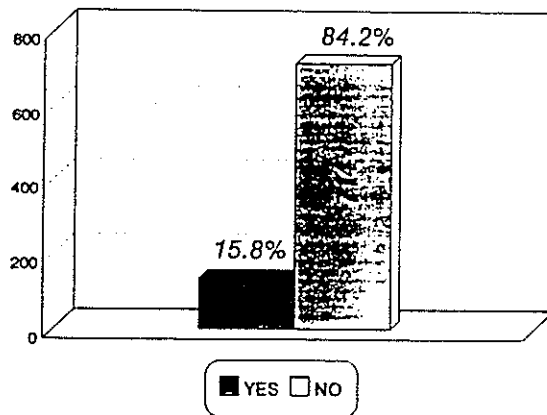


Fig. 9- Peritubular and tubular hyalinization

It was found in 148 (17.5%) cases.

Peritubular and tubular hyalinization

The mean age in this group was 35.4 years (SD = 7.3).

It was observed in 134 cases (15.8%)

Orchitis

The mean age was 33.3 years (SD = 7.2) and it was found in 105 cases (12.4%).

Atrophic testis

The mean age was 32.8 years. (SD = 6.6). Atrophic testes were seen in 105 cases (12.4%).

Overall, Sertoli cell hyperplasia was negative in 727 cases (85.7%), mild in 49 cases (5.4%) and moderate in 75 cases (8.8%). There was no sloughing in 387 cases (45.6%) severe in 318 cases (37.5%), moderate in 82 (9.7%), and mild in 61 (7.2%) (Fig. 2).

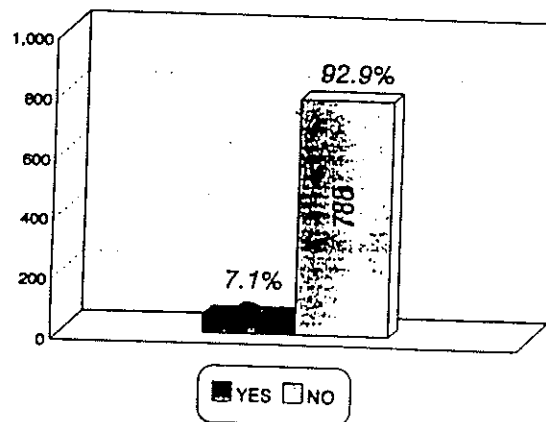


Fig. 10- Orchitis

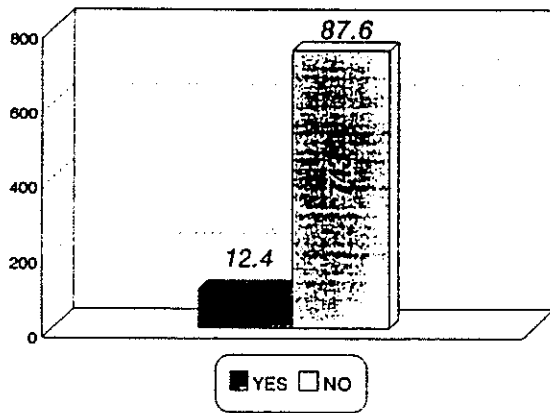


Fig. 11- Atrophic testis

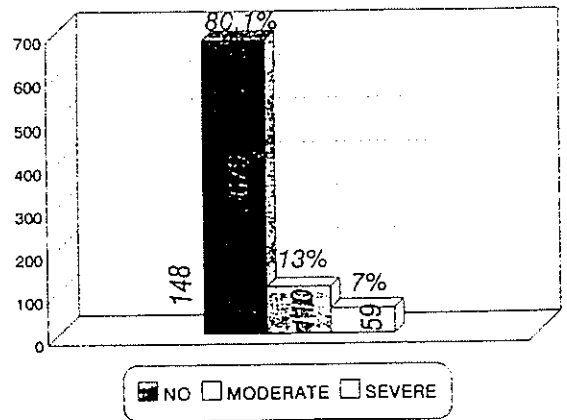


Fig. 14- Leydig cell hyperplasia

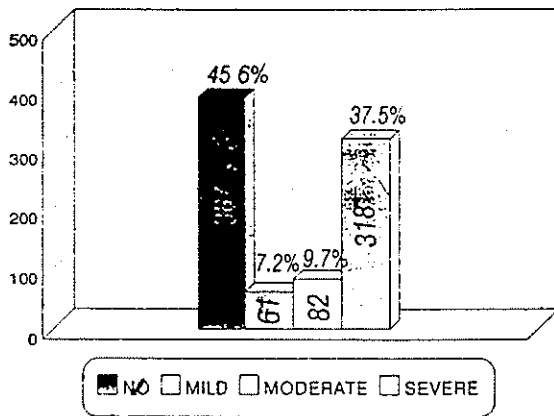


Fig. 12- Sloughing of immature cells

BASEMENT MEMBRANE THICKNING

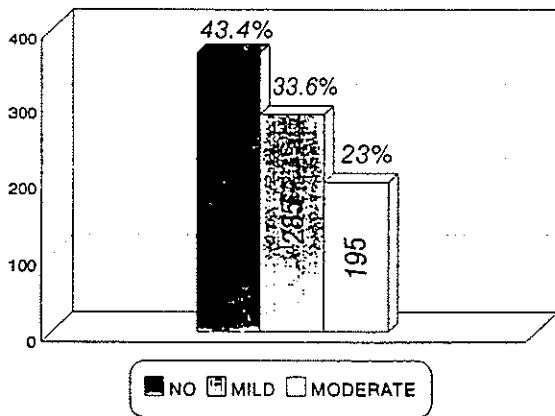


Fig. 13- Basement membrane thickening

DISCUSSION

From this study it is obvious that the histopathologic findings in testicular biopsies in bilateral cases may not be identical. Although bilateral testicular biopsies of the majority of men show similar histopathologic features, differences are encountered with sufficient frequency to suggest bilateral biopsy as the preferred method of histopathologic studies for infertility.

In our study, it was common to find more than one pattern in a testicular biopsy specimen. therefore, proper interpretation of testicular biopsy requires careful evaluation of all the histologic features and patterns that are observed, because these data are important and helpful for physicians' decisions and choice of treatment. Mention the existence of spermatozoites in specimen is especially critical because good results could be achieved in treatment of this group.

It is very important that the testicular biopsies are sent in appropriate fixative not in formalin to prevent distortion of seminiferous tubules. Stieve's and Bouin's solutions are appropriate.

The best results are achieved when the specimen is fixed for 24 hours before the processing.

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