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Research Article

Incidence of Obstructive Azoospermia Infertility: Histopathological Study Changes in Testes of Deer

MOSA F. ABBAS[1], ABDULBARI ABBAS SAHI ALFARIS[2], ZAINAB WAHEED[3]
[1,2]Department of Surgery and Obstetrics, College of Veterinary Medicine, University of Basrah, Basrah, Iraq.
[3]Department of Pathology, College of Veterinary Medicine, University of Basrah, Basrah, Iraq.
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ABSTRACT
This study included eight male deer from farm in Basra / Iraq that were experiencing swelling of the testicles and promised their ability to reproducing, after bringing it to the consulting clinic at the College of Veterinary Medicine / University of Basra, the clinical examination & sampling were done for the purpose of histopathological examination. The results showed clear atrophied in seminiferous tubules and hemorrhage in the interstitial tissue under capsular, existence lesions like suppression of spermatogenesis, due to vacuolated in epithelium cells and inflammation in the pattern of testis, furthermore, degeneration that affected on spermatozoa and resulting in germ cells arrest. We conclude from this research that there is an infection that led to swelling of the testicles, their inability to reproduce, and several other causes of exposure to a high degree of heat.

Keywords: Deer, Hypospermatogenesis, infertility, Obstructive azoospermia.

INTRODUCTION

Western Europe, northwest Africa, Asia and northwestern America, they are the most common countries that have red deer.It is recognized that female deer live separately from males and only meet with them during the breeding seasons, which often occur in the month of October, when females can give from 1 to 3 fawns during one parturition. (Charlton, 2007). Azoospermia, it is one of the most important conditions that affect the male reproductive system of deer, which in turn leads to infertility. Obstructive azoospermia is described as the absence of sperms during the ejaculation despite normal spermatogenesis (Aziz *et al*., 2006). Obstructive azoospermia that resulting from infection, is the most common form of OA in China, has not been widely studied (Xiang *et al*., 2016). This condition can be identified only by taking a biopsy of the testicle tissue. Obstructive azoospermia may be congenital condition like (Lack of the vas deferens, idiopathic epididymal obstruction) or acquired from external causes (infections, vasectomy, and other iatrogenic injuries to the male genital tract), Depending on the level of obstruction, acquired obstruction can be treated using microsurgical reconstruction or transurethral resection of the ejaculatory tract, (Schlegel, 2004).many articles report testicular disorders in cervids including white-tailed, one of the types of deer (Odocoileus Virginianus; Taylor *et al*., 1964), black-tailed deers (Odocoileus Hemionus; Tiller *et al*., 1997; Odocoileus Hemionus Columbianus; DeMartini and Connolly 1975; Odocoileus Hemionus Sitkensis; Bubenik *et al*., 2001), Red deer (Cervus elaphus; Carrasco et al. 1997), and pampas deers (Ozotoceros Bezoarticus, Ungerfeld 2013). There were described that the diagnosis of Sertoli cell-only pattern and hypo spermatogenesis by FNAC in an Iberian red deers (Cervus Elaphus Hispanicus) (Eliana *et al*., 2014).

MATERIAL AND METHODS

This study included eight male Deer, which were revealed at the advisory clinic affiliated to the Faculty of Veterinary Medicine / University of Basra, Which suffered from swelling in the testis and its inability to reproduce and after surgical procedure of deer testis, we took section of testicular tissue pieces from organs, covering and labeling with bearing the lab. All samples were numbered and at all stages using a special white paper for the numbering process after writing it with a special pencil and resistant to all the fluids used in the histopathology. Then fixing the sample and hardening it in a way that does not lose its natural shape and does not allow its components to rupture during the cutting process. small block of tissue is immersed in neutral buffered formalin 10% dehydrating agents Ethanol. A graded ethanol series from water through 70%-80%-95%-100% ethanol, then one hour Xylene II for complete clearing, the tissue becomes transparent. Tissue is impregnated with melted wax than adequate to cover the tissue

block. The paraffin block is cooled before sectioning. The section thickness is 5 um by Microtome. Sections of the ribbon making at last staining with Hematoxylin & Eosin and examined by light microscope (Bancroft *et al.*, 2002).

RESULTS

The results were shown after sampling the laboratory and conducting the pathological examination, there are pathological changes in testicular tissue, like clear atrophied seminiferous tubules, hemorrhage in the interstitial tissue and under capsular region figure (1). There are other lesions present like suppression of spermatogenesis figure (2) due to vacuolated in epithelium cells figure (3) and inflammation in the pattern of testis which they are present neutrophils , lymphocytes and plasma cells with spermatid cells figure (4&5). Degeneration initially and prognosis are effected on spermatozoa and result germ cells arrest figure (6).

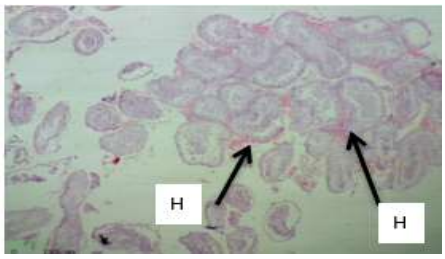

Fig.1: section of deer testes. Show hemorrhage in to interstitial tissue (H), irregular shape of seminiferous tubules. X 4 H& E.

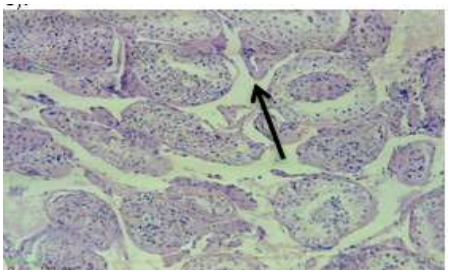

Fig.2: section of deer testes. Show suppression of spermatogenesis in seminiferous tubules (I) and accumulation pink – bluish material in basement membrane (A). X 10 H& E.

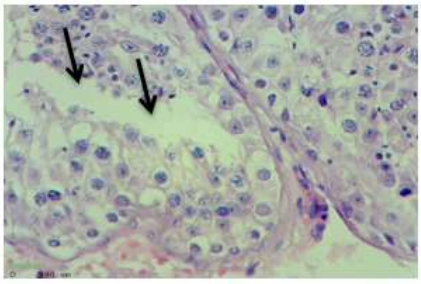

Fig.3: section of deer testes. Show vacuolated epithelium cells. X 40 H& E.

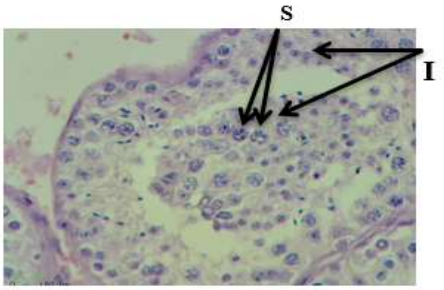

Fig.4: there are spermatid cells (S) in the lumen of seminiferous tubules and vacuolated cell, inflammatory cells (I). X 40 H& E.

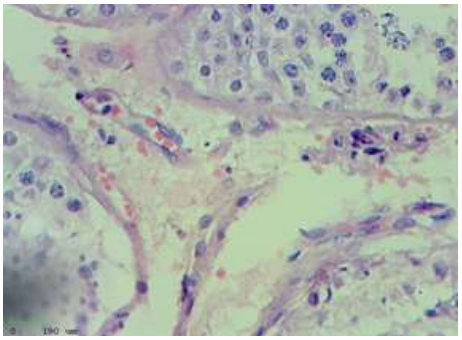

Fig.5 section of deer testes. Show spreated leydig cells vacuolated X 40 H& E.

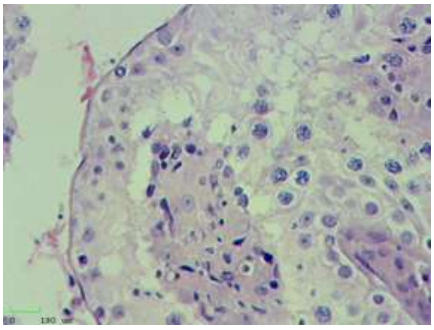

Fig.6: section of deer testes. Show degeneration and arrest of germ cell X 40 H& E.

DISCUSSION

In testicular tissue of obstructive azoospermia , we found pathological lesions after the examination. There is atrophy of the seminiferous tubules with or without hypospermatogenesis, the level of cellularity in germinal epithelium was marked decreased in general, furthermore, germs cells have also decreased in number. Seminiferous tubule hyalinization: the tubules were smallest in diameter than normal, accomplished with a much thickened basement membrane and tubular collagenization. The germinal epithelium had been lost in their cases (Layla and Nabeel, 2011), and there are hemorrhage, present the inflammatory cells, it is possible etiology include an inflammatory processes (Donald and James, 2007), vascular obstruction, nutritional deficiency, some plants or congenital aplasia, absence of vas

deferens (Carrasco *et al*., 1997). In addition to the failure to form functional testicle tissues, which leads to a decrease or inhibition of testosterone activity (Bubenik, 1982 and Karen *et al*., 2015). Lesions that were resulting from sever testicular degeneration, likely commence by vascular damage and inflammation, destruction of the blood- testis barrier may account for continued progression (James and Guy, 1975). In some cases of obstructive azoospermia include when the ducts are ligated (tied), as in a vasectomy, blockage due to trauma or infection, or by dysfunction the process of ejaculation, which may be caused by neurological damage from surgery, diabetes or spinal cord injury (Karen and Edmund, 2013).

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