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PRESENCE OF SPERMATOZOA AND SPERMATIDS IN THE SEMEN OF MEN WITH GERMINAL CELL APLASIA.

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INTRODUCTION AND OBJECTIVES: Sertoli cell only (SCO) syndrome, or germinal cell aplasia, has clasically been described as the complete absence of germ cells in the seminiferous tubules. This histologic description of SCO may be misleading, as rare islands of spermatogenesis can be present in the testis. With the advent of intracytoplasmic sperm injection (ICSI), individual sperm obtained from testicular tissue may be used for the fertilization of oocytes. The purpose of this study was to assess for the presence of mature germ cells in the ejaculates of patients with SCO.

METHODS: A retrospective review of 3005 semen analyses performed at our center from Jan, 1993, through July, 1996, yielded 256 specimens (8.5%) from 208 patients which were azoospermic by standard semen analysis techniques. A histochemical technique utilizing nuclear-fast red and picroindigocarmine staining of cytospin slides (NF/PICS) to identify rare spermatozoa and spermatids was employed.

RESULTS: Of 134 azoospermic patients who were clinically evaluable, 93 had surgically confirmed obstructions (i.e. post-vasectomy and epididymal obstruction), and 10 had congenitally absent vasa. Twelve patients with FSH elevations of more than twice the normal range did not undergo testis biopsy. Nineteen patients underwent surgical biopsies which confirmed primary testicular pathology; 6 of 19 men had SCO syndrome. Three of these 6 men with SCO had rare spermatozoa or spermatids identified by NF/PICS. As white blood cells (WBC's) and spermatids both appear as round cells under the microscope, the possibility that WBC's had been misinterpreted as spermatids on NF/PICS was examined. Wright's staining, which is specific for WBC's, was compared with NF/PICS findings on all patients with non-obstructive azoospermia, showing the two findings to be independent.

CONCLUSIONS: In the clinical management of patients with azoospermia and an elevated FSH, the NF/PICS technique may be used prospectively to identify men with some spermatogenesis. This would obviate the need for a diagnostic testicular biopsy prior to a combined therapeutic/diagnostic biopsy for the purpose of an ICSI procedure.