Serum anti-sperm antibodies associated with orchitis in a bull

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This report describes the presence of antisperm antibodies (ASA) in a 32-m old Angus bull with orchitis. On presentation, physical and genital system examinations were unremarkable, except for bilaterally heterogeneous ultrasonographic appearance of the testicular parenchyma. Asthenozoospermia (30% motile spermatozoa) and teratozoospermia (26% normal spermatozoa) were noticed, with the main morphologic abnormalities being primary. There was leukospermia and a moderate amount of germ cells in the ejaculate. Differential diagnosis included bilateral orchitis, testicular neoplasia or degeneration with calcinosis. Aerobic semen culture yielded pure growth of alpha hemolytic *Streptococcus sp.*. Testicular biopsy revealed testicular degeneration and interstitial orchitis. Presence of ASA was confirmed by sperm agglutination test and indirect flow cytometry (IgG). Interstitial orchitis is characterized by interstitial lymphocytic infiltration and fibrosis, and can be of infectious or immune origin.\(^1\) Breakdown of the blood-testis barrier during trauma or infection can expose spermatozoa to leukocytes, with formation of ASA.\(^2\) Binding of ASA to spermatozoa can result in sperm agglutination, inhibition of metabolic processes and reduction of sperm motility and velocity.\(^3\) In bulls, ASA can negatively affect sperm capacitation, acrosome reaction and fertility.\(^2, 3\) Treatment was aimed at controlling bacterial growth and inflammation. The bull was treated with flunixin meglumine, ceftiofur sodium and isoniazid for 14 d. Serial semen collections for 2 w remained unchanged, except for resolution of leukospermia within 4 d of the beginning of treatment. Semen and serum were shipped to the VMTH for re-evaluation 18 m after initial presentation. No leukocytes but few germ cells were present. Sperm motility could not be evaluated due to shipping conditions. Sperm morphology improved (48% normal spermatozoa) but was still below the recommended minimum value for classification as a satisfactory breeder. Serum ASA was still detected by agglutination test and indirect flow cytometry. Testicular dysfunction was likely to persist due to testicular degeneration or immune-mediated spermatodysgenesis secondary to orchitis.

**Keywords:** Antisperm antibodies, bulls, testicular degeneration, autoantibodies, orchitis.

**References**