Histological characterization and immunolocation of Trypanosoma vivax in sexual glands of young goats

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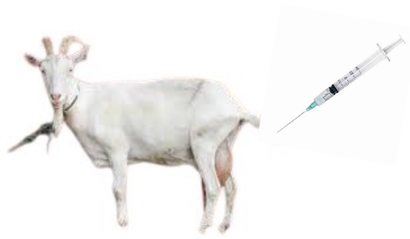
INTRODUCTION AND OBJECTIVE

Trypanosoma vivax is an important protozoon which causes **economic loss** and **affects the genital system**. However, it's important to emphasize that the **seminal characteristics** are also a result of male sexual glands contribution. It's also important to **localize the parasite in these glands** to elucidate the path taken by it to the organs and **which structures are damaged**. Therefore, the objectives of the present study are to **characterize the sexual glands of young goats experimentally infected with *T. vivax* by histology** and **localize the parasite in these glands by direct immunofluorescence assay.**

MATERIAL AND METHODS

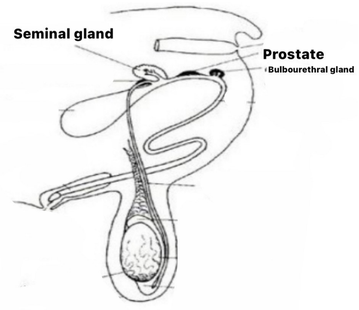


INF-G = 15 animals

1 mL of blood − $1x10^4$ trypomastigotes of Miranda strain

CONT-G = 5 animals

47 days - Euthanasia



Histological analysis

Direct immunofluorescence assay

RESULTS

- Direct immunofluorescence assay: effective in detect the presence of *T vivax* in 80% of the seminal vesicles, 60% of the prostate and 60% of the bulbourethral glands (Figure 1), while 100% of CON-G were negative in all tissues (Figure 2).
- Microscopic aspect, 60% of the seminal vesicles (Figure 3), 40% of the prostate (Figure 4) and 6,7% of the bulbourethral glands (Figure 5) presented inflammatory infiltrate in several degrees.
- Sensitivity, specificity and accuracy, respectively, were: seminal glands (80%, 100%, 90%), prostate (60%, 100%, 80%), and bulbourethral glands (60%, 100%, 80%)

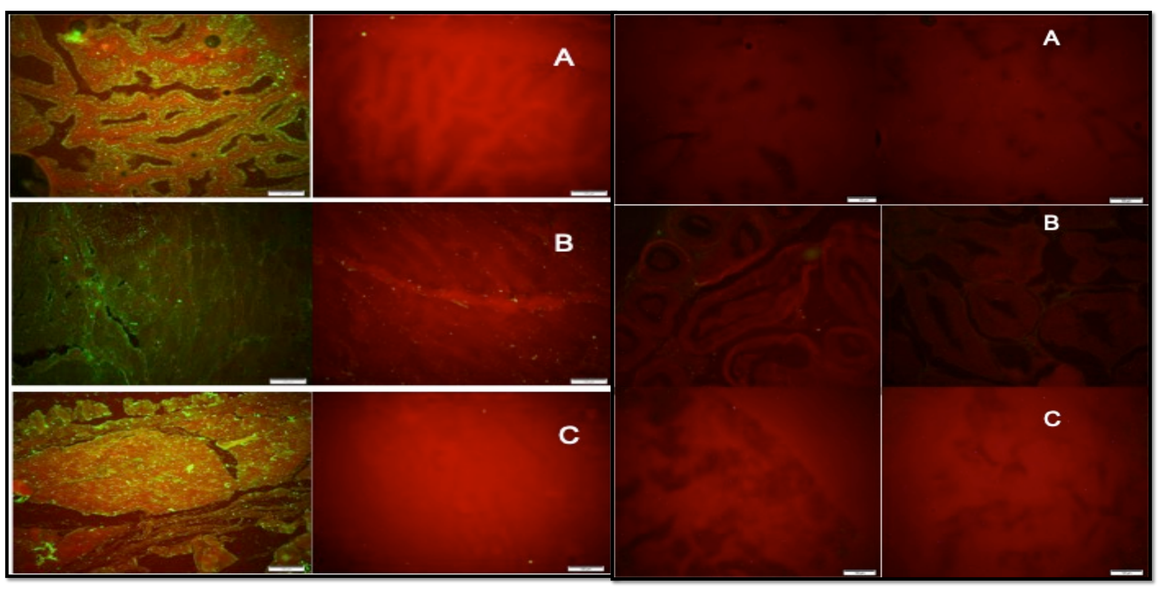


Figure 1: Direct Immunoflorescence Reaction in the sexual glands of male goats infected with Trypanosoma vivax. On the left side, images of tissues positive for T. vivax are represented, and on the right side tissues exposed to the absence of serum and, therefore, negative. (A) Vesicular gland; (B) Prostate; (C) Bulbourethral Gland.

Figure 2: Direct Immunoflorescence Reaction in the sexual glands of goats. Control animals. The top of each image indicates tissues that have been treated with absence of anti T. vivax serum and tissues with the presence of serum. All cases were negative. (A) Vesicular Gland; (B) Prostate; (C) Bulbouretral Gland.

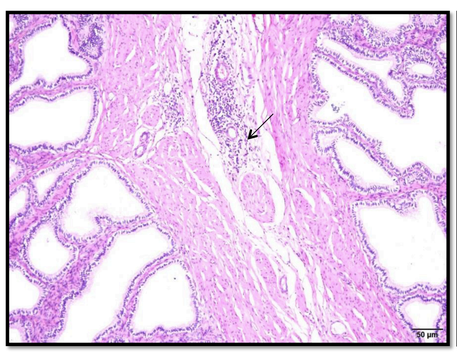


Figure 3: Histological section of seminal gland showing perivascular mononuclear inflammatory infiltrate moderate interstitial (arrow).HE

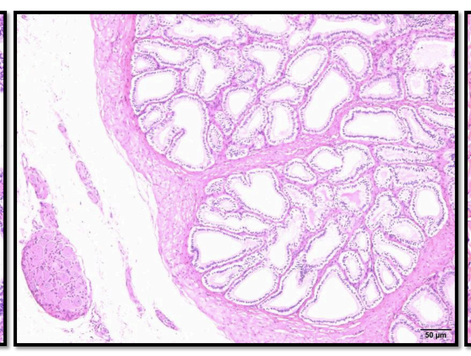


Figure 4: Histological section of seminal gland showing in the serous nerve ganglion immersed in the adipose tissue, where inflammatory infiltrate discrete mononuclear occurs around capillaries. HE

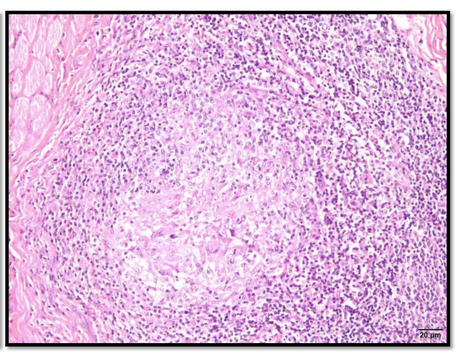


Figure 5: Histological section of prostate showing inflammatory reaction granulomatous chronic disease showing cell-modulated macrophages epithelioid, bordered by an exuberant lymphoid reaction. HE.

DISCUSSION

- The direct immunofluorescence assay demonstrated reliability of this assay for *Trypanosoma vivax* detection
- The location of *T. vivax* in these reproductive organs indicates direct involvement in the pathogenesis of infection, in addition to systemic effects of trypanosomiasis, affecting male fertility.

CONCLUSION

Experimental infection with T. vivax in male **goats produce inflammatory damage in sexual glands**, and **for the first time** the **presence of the parasite** in these tissues **was demonstrated by direct immunofluorescence assay**.

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