

## Histology of Seminal Vesicle and Pars Musculosa of *Orthocoelium scoliocoelium* (Trematoda: Digenea)



### Bio-medical

**KEYWORDS :** *Orthocoelium scoliocoelium*, seminal vesicle, pars musculosa and sperm.

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### ABSTRACT

Light microscopy of the amphistomes *Orthocoelium scoliocoelium* clearly reveals that there are clear differences in seminal vesicle and pars musculosa of the worm. Therefore, the present research work is great import from medico-veterinary standpoint.

### INTRODUCTION

Majority of research works were carried out in cestodes helminthes parasites. The histology and histochemistry of diverse tissues of the amphistomes (Trematoda: Digenea) received little attention (Sharma and Hora, 1983; Swarnakar and Sharma 1992, Swarnakar & Soni 2004 and Swarnakar 2013). The ultra-structure of reproductive ducts and accessory glands of a few trematodes have been studied (Sharma et al., 1994; Swarnakar and Sharma 1997 and Swarnakar, 2010). The light microscope histology of seminal vesicle and pars musculosa of flukes as well as tissues of different adult flukes are hardly available.

It was therefore, decided to carry out light microscope histology of seminal vesicle and pars musculosa ducts of amphistome of *Orthocoelium scoliocoelium* infecting the rumen of water buffaloes.

### MATERIALS AND METHODS

The amphistomes *Orthocoelium scoliocoelium* were collected from rumen of the freshly slaughtered buffalo (*Bubalus bubalis*) at local zoo abattoir in Udaipur. Worms were retrieved between July to September. The amphistomes were washed several times in normal saline water, fixed for 24 hrs. in alcoholic Bouin's fixative, washed in running tap water for at least 24 hrs, dehydrated in ascending series of alcohols, cleared in xylene, in filtered with and embedded in wax, sectioned at 6 µm and stained in Harris haematoxylin and eosin for general histology.

### RESULTS

Two diagonal testes are found in the *Orthocoelium scoliocoelium* from each testis arises a vas efferens. The two vas efferens merge to form a common duct called vas deferens. Vas deferens dilates to form seminal vesicle.

Seminal vesicle: First part of vas deferens is known as seminal vesicle (SV). This duct lined by syncytial epithelium and bearing striated apical border. The syncytium is enclosed by a weak circular and longitudinal muscle layers and this duct in mature worm is full of sperms (S) and has wide lumen (Fig. 1).

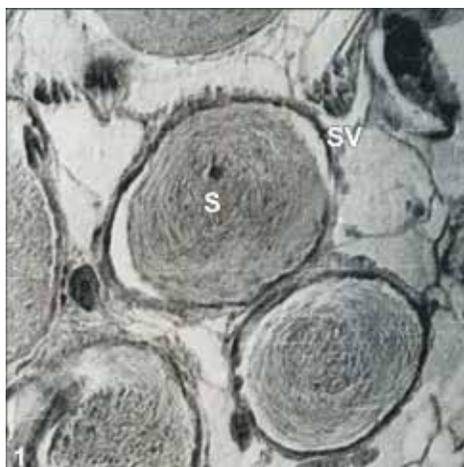


Fig. 1: T.S. of Seminal Vesicle (SV) showing Sperms (S)

Pars musculosa: The terminal part of seminal vesicle is transformed into pars musculosa (PM). The wall of pars musculosa is very thick due to the presence of well developed musculature. The musculature of the duct consist mainly longitudinal fibers, which may be enveloped by a thin layer of circular muscles. Internally the pars musculosa is lined by syncytial epithelium. The musculature is thicker in mature worms compared to that of immature one. The lumen of this duct is quite spacious and full of sperms (S) (Fig. 2).

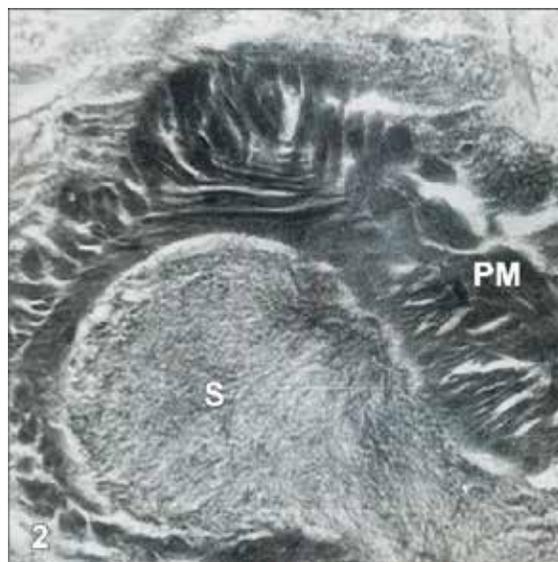


Fig. 2: T.S. of Pars Musculosa (PM) showing Sperms (S)

### DISCUSSION

The seminal vesicle is appears to be narrow and thick walled due to absence of the sperms. Also because of this reason, the musculature exhibits clearly the circular and longitudinal muscle layers. On the contrary in the mature worm seminal vesicle appears to be wide with a prominent lumen. The wall is comparatively thin than in mature flukes. Infect the thickness of wall has changed due to the presence of abundant sperms in it. As a result of this the circular and longitudinal layer of the musculature of the wall are indistinct.

The pars musculosa is a highly muscular region of the male reproductive duct. A marked regional differentiation of the epithelial lining and the musculature are the characteristic of this region. The syncytial lining is devoid of the brush border whereas the musculature is very well developed, which is responsible for making the thickest portion (wall) of the reproductive duct. This highly muscular portion appears to take part in swift movement of bunches of the sperms from seminal vesicle to pars prostatica (Swarnakar & Soni 2004).

## REFERENCE

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