Because of scant interlobular connective tissue, pancreatic parenchyma did not show distinct lobule formation in groups 2 and 3. However, distinct lobulation with well-developed islets of Langerhans along with clusters of Langerhan cells were seen in groups 4 onward. The long and short diameter of lobules ranged from 23.48 and 19.78 µm to 36.12 and 35.26 µm in groups 4-10.

References

Macracanthorhynchus hirudinaceus in a Wild Boar of Wayanad, Kerala

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(Received : 03-12-2012; Accepted : 11-03-2013)

Macracanthorhynchus hirudinaceus, the thorny headed worm belonging to the phylum Acanthocephala infects small intestine of pigs (Jubb et. al., 1993) by ingesting either the infected grub or beetle (Soulsby, 2005). The present paper reports the incidence of M. hirudinaceus in a wild boar.

Materials and Methods
A carcass of a wild boar was presented to the Department of Veterinary Pathology, College of Veterinary and Animal Sciences, Pookode on 19th December 2009 for post-mortem examination by the officials of Department of Forest, Kerala. The animal was suspected to be hit by a motor vehicle. Detailed post-mortem examination of the carcass was conducted.

On detailed examination of the small intestine, about 20-25 worms of 5-50 cm length were observed attached to the mucosa (Fig. 1). These worms (anterior end) were dehydrated in ascending grades of alcohol and then cleared using creosote. Cleared specimens were mounted using DPX. The species identification was conducted based on Soulsby (loc. cit). Sample of small intestine where these worms were attached were collected in 10% formalin. Sections were cut for histopathological examination at 5µ thickness and stained with routine Haematoxylin and Eosin stain (Bancroft and Cook, 1995).

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Results and Discussion

The post-mortem lesions were suggestive of death due to motor vehicle accident with subcutaneous haemorrhages, severe liver damage and pulmonary congestion and oedema.

Small intestine showed large number of red granulomatous nodule approximately one cm in diameter studded on the serosal surface (Fig.2). The worms seen in the small intestine were identified as *Macracanthorhynchus hirudinaceus*. On histopathological examination of the intestine, the normal architecture of intestine was disrupted at the site of attachment. Granulomas extending even up to the serosa were seen. The centre of the granuloma contained the cross section of the parasite at the hooked proboscis region. Inflammatory zone consisted of concentrically arranged belts of connective tissue. Around this, cell assemblage dominated by eosinophils, surrounded by macrophages maturing into epitheloid cells were seen interspersed with fibroblast and collagen fibres (Fig.3). Necrotic muscle fibres could also be seen. The inflammatory zone showed high degree of neovascularisation. Areas adjacent to the granuloma showed disruption of villi, goblet cell hyperplasia and infiltration of inflammatory cells throughout the layers of intestine.

*Macracanthorhynchus hirudinaceus* occurs in the small intestine of the domestic pigs and wild boars and is prevalent in most of the countries of the world. Other species of this genus, *M. catalinum* and *M. ingens* occur in small intestine of mammals such as the wolf, badger, fox, domestic dog and skunk, mink, mole, raccoon respectively, but smaller than *M. hirudinaceus* (Jubb et al., loc. cit). Moreover, *M. ingens*, survived for 2 weeks and grew only few millimetres in pigs (Nelson and Nickol, 1986).

In the present case, granulomas extending even up to the serosa were seen. Previously,
Nelson and Nickol, (*loc. cit*) demonstrated that *M. hirudinaceus* enters up to muscularis layer of small intestine while *M. ingens*, penetration was limited to submucosa.

Pigs infected with *M. hirudinaceus* may suffer ill thirst and anaemia, probably related to the leakage of plasma protein into the intestine and haemorrhage from numerous focal ulcerative lesions. Heavy worm burden may cause mechanical obstruction which may lead to mortality especially in piglets. Severe infection may cause slow growth or emaciation (Soulsby, *loc. cit*), lower weight gain (Tarczynski, 1956) and occasional perforation of the intestine causing fatal peritonitis. However, in the present case, in spite of the worm burden, carcass was in good condition. Marquardt *et al.* (2000) also observed that although serious intestinal pathology and even death may occur, mild infection causing few lesions and little or no economic loss are typical.

*M. hirudinaceus* infection can be zoonotic too. Humans especially children get infection by ingesting the infected beetles. In humans, the symptoms seen are weight loss, intermittent fever, bulging of abdomen and severe pain. Serious complications like severe ulcerative enteritis or perforation of the bowel resulting in peritonitis can occur. The worms sometimes occupy extra intestinal positions (Radomyos *et al.*, 1986).

**Summary**

Present communication reports the presence of *Macracanthorhynchus hirudinaceus* in a wild boar. Small intestine showed large number of red granulomatous nodules. On histopathological examination typical granuloma reaching up to the serosa with the cross-section of the parasite in the centre was observed with adjacent intact intestine showing acute inflammatory reaction.

**Acknowledgement**

The authors are thankful to the Dean, College of Veterinary and Animal Sciences, Pookode, Wayanad for providing the facilities needed for the study.

**References**


