

# Evaluation of Serosal Nerves in Hirschsprung Disease

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**Introduction:** For the diagnosis of Hirschsprung disease (HD) and related disorders the surgical pathologists evaluate the presence or absence of ganglion cells, the morphology of ganglion cells when present and the hypertrophy and hyperplasia of nerves in Auerbach's and Meissener's plexus.. The current economic health management issues make the attainment of a rapid reliable diagnosis of Hirschsprung disease highly desirable. An additional criterion apparent on hematoxylin & eosin stained sections would be of great diagnostic utility. The presence of submucosal hypertrophic or prominent nerve trunks is consistently recognized as a diagnostic clue. But the diagnostic value of serosal nerves has not been studied.

**Objective:** To establish the diagnostic usefulness of serosal hypertrophic nerves in Hirschsprung's disease on hematoxylineosin-stained sections.

**Study design:** It is a comparative study

**Settings:** The study was carried out in the section of Histopathology, PIMS Islamabad.

**Duration of study:** Jan 2004 to July 2005

**Materials & Methods:** We retrospectively evaluated the thickness of serosal nerves and compared them with the submucosal nerves in 30 diagnosed cases of Hirschsprung disease. Unremarkable resection margins from colectomy specimens were also evaluated as a control group.

**Results:** In 96.7% of cases there was significant thickening of serosal nerves. Serosal nerves were found to be more thickened than sub mucosal nerves in 40% of cases and were equally prominent in 56.7% of cases.

**Conclusion:** We found thickened serosal nerves in rectal biopsy of infants and young children with Hirschsprung disease or Syndrome. This can serve as a useful marker for diagnosis in addition to absent ganglion cells and thickened nerves in Auerbach's and Meissener's plexus.

**Key words:** Serosal nerves, Hirschsprung disease, Hirschsprung syndrome, aganglionic segment.