



DIAGNOSTIC VALUE OF CALRETININ AND SYNAPTOPHYSIN FOR DIAGNOSING HIRSCHSPRUNG DISEASE.

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INTRODUCTION

Early and accurate detection of Hirschsprung disease is important to prevent neonates and infants from its life-threatening complications.

OBJECTIVES

This study aimed to assess the diagnostic value of calretinin in conjunction with synaptophysin in diagnosis of Hirschsprung Disease.

METHODOLOGY

A cross sectional study design was performed in Division of Pathology of the Philippine Children's Medical Center from January 2018 to December 2019. Formalin-fixed paraffin tissue blocks of colonic and rectal biopsies of 29 pediatric patients with a pre-operative diagnosis suspicious for Hirschsprung Disease and 29 pediatric patients normal colonic and rectal biopsies were included in the study.

RESULTS

Calretinin had a sensitivity of 92.0%, a specificity of 97.0%, a positive predictive value of 94.1%, a negative predictive value of 95.8%, and an accuracy of 94.8% in detecting ganglion cells. In detecting plexi, synaptophysin had an accuracy of 100% with a sensitivity and specificity of 100.0%.

CONCLUSION

Calretinin in conjunction with synaptophysin is a reliable test in the accurate diagnosis of Hirschsprung Disease.

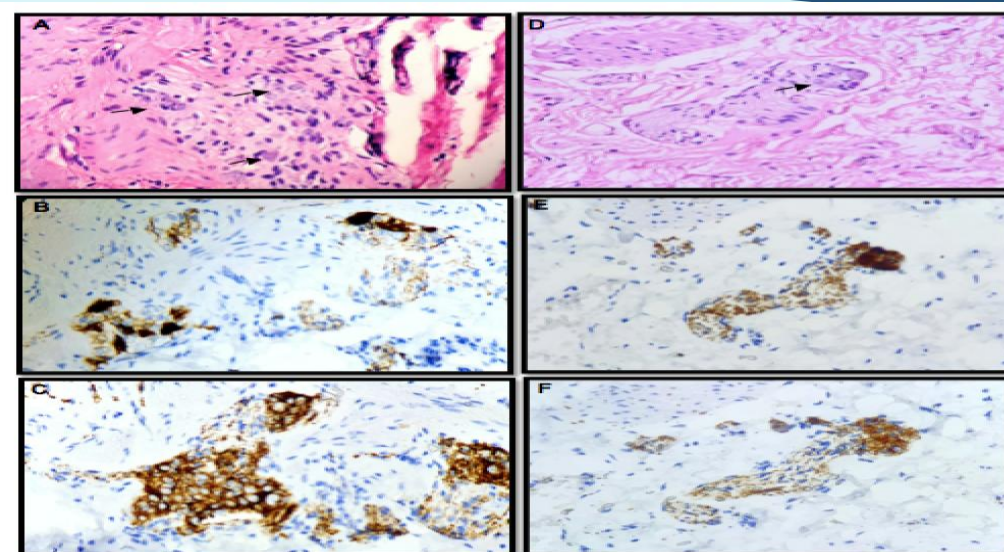


Figure 1: A. Myenteric Ganglion cells (Black arrows) from a 3 year old, H and E stain. B. Calretinin. Strong, smudgy nuclear and cytoplasmic staining. C. Synaptophysin. Strong, cytoplasmic staining of plexi fibers. D. Myenteric Ganglion cells (Arrows) from a 2 year old, H and E stain. E. Calretinin. Strong, smudgy nuclear and cytoplasmic staining. F. Synaptophysin. Strong, cytoplasmic staining of plexi fibers, 400x.

RECOMMENDATION

Immunohistochemical staining with Calretinin and Synaptophysin is recommended in children less than one month old as ganglion cells in this age group are more immature in appearance and maybe mistaken for lymphocytes. It is recommended that future studies use other markers such as Acetylcholinesterase. The future investigations can include assessment of Calretinin, how Calretinin and Acetylcholinesterase will work in conjunction.

Keywords: Hirschsprung Disease, Calretinin, Synaptophysin, Filipino, Pediatric