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ADVANCED IMAGING TECHNIQUES FOR CHRONIC PANCREATITIS: FOCUS ON MRI

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ABSTRACT

Chronic pancreatitis (CP) is characterized by continued inflammation and destruction that results in irreversible changes in pancreatic parenchyma and ductal anatomy. It is well established that MRI with MRCP is more sensitive than CT for detecting ductal and subtle parenchymal changes, especially in the early stages of chronic pancreatitis. MRCP provides information on gland morphology, ductal morphology, and signal changes in chronic pancreatitis, which is the cornerstone of non-invasive assessment of the disease. Magnetic resonance cholangiopancreatography (MRCP) can display changes in the ducts, including side branch enlargements, that are similar to tissue scarring and damage. The gland's exocrine function and a higher number of side branch enlargements can be assessed with secretin-stimulated MRCP.

Keywords: Chronic Pancreatitis, MRCP, MRI, Pancreatic Ductal Changes, Secretin-Stimulated MRCP, Pancreatic Parenchyma, Exocrine Function, Pancreatic Imaging, Gland Morphology, Ductal Morphology, Side Branch Enlargement, Non-Invasive Assessment.

I. INTRODUCTION

The pancreas is a long, supplementary digestive gland that crosses the bodies of the L1 and L2 vertebrae on the back of the abdomen. Between the left spleen and the right duodenum, in the upper belly, is the pancreas, which is positioned transversely.^[1] The head, neck, body, and tail are its separate sections. The head is encircled by the duodenum's C loop and rests on the renal vein and inferior vena cava.^[2] The splenic hilum is reached via the pancreatic tail. The pancreas secretes endocrine substances (glucagon and insulin from the pancreatic islets of Langerhans) that reach the bloodstream and exocrine substances (pancreatic juice from the acinar cells) that pass via the main and auxiliary pancreatic ducts and enter the duodenum.^[3]

The head, neck, body, and tail make up the four sections of the pancreas. The enlarged portion of the gland