

## CASE REPORT

## Telerobotic-assisted laparoscopic spleen-preserving partial resection of the pancreatic tail for insulinoma

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### Abstract

Laparoscopic pancreatic resection is rarely described. Telerobotic-assisted laparoscopy may offer some advantages for resection of the pancreatic tail. A 49-year-old woman was diagnosed with insulinoma located in the pancreatic tail. Telerobotic-assisted laparoscopic spleen-preserving resection of the pancreatic tail was performed. Operation time was 195 minutes. The postoperative course was uneventful. The previously described advantages of a telerobotic approach with extended range of motion and three-dimensional view make more complex operations like pancreatic resection possible and may offer extended indications for laparoscopic surgery.

**Key Words:** *Insulinoma, telerobotic-assisted, laparoscopy*

### Introduction

Laparoscopic surgery of the pancreas is rarely described but patients seem to benefit from this approach [1]. In this challenging procedure telerobotic-assisted laparoscopy shows advantages compared with traditional laparoscopy as regards range of motion and three-dimensional imaging.

We present a case of telerobotic-assisted laparoscopic spleen-preserving partial resection of the pancreatic tail.

### Case outline

A 49-year-old woman was diagnosed with insulinoma showing hypoglycaemia with increased insulin secretion and a lesion in the pancreatic tail revealed by magnetic resonance imaging (Figure 1). Telerobotic-assisted laparoscopic resection of the pancreatic tail was planned.

First the splenic flexure was dissected with ultrasonic dissection using five-port traditional laparoscopy. The pancreatic tail was then mobilized with an electro-cautery hook using the DaVinci Robotic

System (Intuitive Surgical, Mountain View, USA). Some larger vessels were divided between clips. The insulinoma was identified in the pancreatic tail and left pancreatic resection was performed using an endoscopic linear stapling device; the staple line was over-sewn (Figure 2). Operative time was 195 minutes and intra-operative blood loss was approximately 20 ml. The postoperative course was uneventful with immediate normalization of glucose metabolism. Pathological examination revealed a benign insulinoma with free resection margins.

### Discussion

Today laparoscopic surgery is the preferred approach for numerous surgical procedures. The laparoscopic approach for pancreatic resection has been described in limited numbers only and to date has been restricted to benign lesions [1,2]. The results are promising and for selected patients resection of the left pancreas is described to be safe and feasible with low morbidity and fast postoperative recovery [1,3]. An accurate preoperative localization is important as

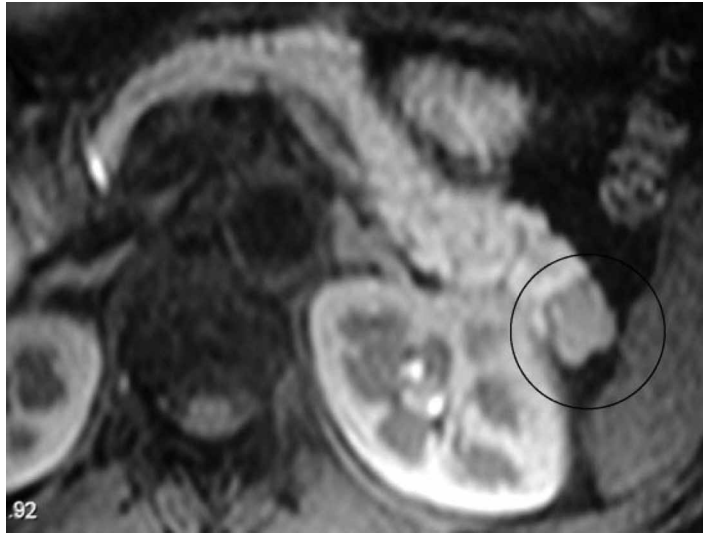


Figure 1. Mangan-enhanced magnetic resonance imaging of the insulinoma localized at the pancreatic tail.

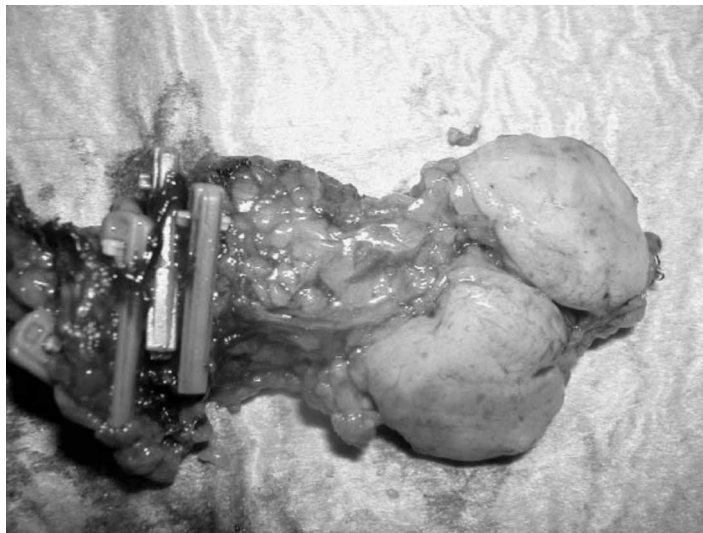


Figure 2. Macroscopic view of the insulinoma located in the resected pancreatic tail.

only lesions in the body or tail are appropriate for laparoscopic resection [3].

In comparisons of telerobotic-assisted laparoscopy with traditional laparoscopy some major advantages have been described: the instruments provide additional degrees of freedom thanks to intra-abdominal articulation and thus facilitate dissection [4,5]. Furthermore, the three-dimensional virtual operative field makes orientation easier [4].

From our own experience we consider that using telerobotic-assisted laparoscopy allows us to perform complex procedures with high precision and good results. In this case the telerobotic technique established an excellent stereoscopic view and good access to the pancreatic tail. The preparation was comfortable due to the extended range of motion; this was especially useful when dissecting the pancreatic tail from the spleen.

This report shows that telerobotic-assisted laparoscopy for this complex procedure can be performed

safely. The above-mentioned advantages of the telerobotic approach may offer new indications for new procedures with a laparoscopic approach.

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