

Enucleation of Pancreatic Head Tumors Combined with Pre-Operative Wirsung Stenting, Intra-Operative Ultrasounds and Absorbable Fibrin Sealant Patch Application: Experience on 13 Cases

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Context Benign/low malignant tumors or metastasis from renal cancer of the pancreatic head can be treated by enucleation; this procedure is technically demanding and it is often followed by high morbidity rates. **Objective** To analyze the peri-operative outcome of our series of enucleations for tumors of the pancreatic head. **Methods** From January 2010 to June 2012 29 out of 149 resected periampullary tumors were cystic neoplasms, 15 were neuroendocrine tumors (NET), 1 was metastasis from renal cancer and 1 was pseudopapillary solid tumor; in 13 of them (28% of 46 patients with pancreatic diseases eligible for atypical resection) an enucleation was performed. Enucleation was contraindicated when the lesion was deeply embedded in gland's parenchyma involving Wirsung or originating from main pancreatic duct itself (main duct type IPMN), and in case of overt malignant appearance. We analyze the features of patients who underwent enucleation. Endoscopic ultrasound was performed preoperatively in 10 patients. ERCP with Wirsung stenting was realized when the distance between the main pancreatic duct and the lesion was less than 3 mm (4 cases). In patients submitted to stent

positioning the mean distance between the lesion and the Wirsung duct was 1.9 mm while in the other group of patients it was 5 mm ($P<0.05$, t test). Intra-operative US was performed in all patients. At the end an absorbable fibrin sealant patch (Tachosil[®]) was placed on the area of enucleation. **Results** The mean diameter of the lesion was 1.9 ± 1.1 cm (range: 1-4.5 cm); histology revealed 2 benign side branch IPMNs, 9 G1 NET, 1 metastasis from renal cancer and 1 pseudopapillary solid tumor. Mean operative time was 209.9 ± 60.3 minutes and mean blood loss was 97.7 ± 63.8 mL. No mortality was observed. Overall morbidity was 46% (including POPF rate of 31%); 4 POPF (2 grade B and 2 grade A). Mean length of hospital stay was 8.5 ± 2.7 days. The reoperation rate was nihil. Readmission regarded only 1 patient. **Conclusion** Enucleation is a good alternative to pancreaticoduodenectomy in benign/low malignant tumors of the pancreatic head. Pre-operative Wirsung stenting, intra-operative ultrasounds and Tachosil[®] application appear related to a satisfactory postoperative outcome.