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Introduction

Intraductal papillary mucinous (IPM) tumor of the pancreas is a rare pancreatic cystic neoplasm that arises from the epithelial lining of the main pancreatic duct (MPD) and /or the branch pancreatic ducts (BPDs) and secretes a thick mucin, which leads to ductal dilatation and obstruction. Despite CT continues to be the primary technique used to perform imaging in patients suspected of having pancreatic tumor, technical advances on magnetic resonance (MR) imaging with dedicated MRCP sequences should replace CT in this indication (1). IPM tumors, even when malignant, are often resectable and have a more favourable prognosis than do ductal adenocarcinoma and classic mucinous cystadenocarcinoma of the pancreas. To avoid recurrent disease, surgical excision should be accurate in terms of localization and extension of the disease. Furthermore, predictive signs of malignancy described in previous studies are numerous and sometimes controversial (2). The purpose of our study was to evaluate the accuracy of preoperative MRI in predicting the type of ductal involvement, the pancreatic location of lesions, and the malignant transformation in IPM tumors of the pancreas and to determine the predictive factors of malignancy at MRI.

Materials and Methods

Twenty four patients with histological confirmation of IPM Tumor were included in the study. The MRI performed before surgery were retrospectively assessed. Two radiologists who were unaware of the initial interpretations of the images independently analyzed the MR imaging studies and characterized the type of lesions, the location and signs of malignant transformation. Interobserver agreement was determined with weighted kappa statistics. After consensus of both radiologists, the observer performance for the MR imaging interpretations were compared to histologic results using weighted kappa statistics and Fisher test.

Results and Discussion

The final diagnoses of IPM tumor were combined type (n=17) and branch duct type (n=7) lesions. Histologic analysis revealed adenocarcinoma (n=18), hyperplasia (n=3), and dysplasia (n=3). The lesions were located mainly in the head or uncinate process (n=16) or were diffuse or multifocal (n=2). Excellent agreement was found between the interpreters (k=0.90) in the evaluation of ductal involvement, good in the evaluation of lesion location (k=0.80), and in the diagnosis of malignant transformation (k=0.74). MRI-histopathologic correlation was excellent in the evaluation of ductal involvement with 100% of sensibility and 94% of specificity (table 1), moderate in the evaluation of lesion location (sens=87%, spe=56%), and in the diagnosis of malignant transformation (sens=83%, spe=83%). None significant predictive signs of malignancy were demonstrated in our study.

Conclusion

MRI is an excellent non invasive alternative for pre-operative evaluation of patient with IPM Tumors. The major pitfalls of MRI were related to the diagnosis of high grade dysplasia. The predictive sign of IPM pancreatic tumor malignancy at MRI included only the presence of solid mass or mural nodules (figure 1).

References

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| | | Pancreatic MRI | | | |
|------------|-------------|----------------|-----------|----------|----|
| | | Branch duct | Main duct | Combined | |
| Pathologic | Branch duct | 6 | 0 | 1 | 7 |
| | Main duct | 0 | 0 | 0 | 0 |
| | Combined | 0 | 4 | 13 | 15 |
| | | 6 | 4 | 14 | 24 |

Table 1 : Agreement between pancreatic MRI and pathologic results for the type of the lesion

Figure 1: Transverse T1 weighted gradient echo imaging with gadolinium injection obtained in a 74-year-old woman who had IPM pancreatic tumor demonstrates a mural nodule (arrow) in the uncinate process.

