ORIGINAL ARTICLE

INCIDENTALLY DISCOVERED SOLID PANCREATIC MASSES: IMAGING AND CLINICAL OBSERVATIONS
Bheemashanker

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ABSTRACT: PURPOSE: The purpose of this study was to review the CT findings and clinical outcome in patients with incidentally detected solid pancreatic masses.

KEYWORDS: CT, Incidental Pancreatic Tumors.

INTRODUCTION: With the improved quality and widespread availability of diagnostic abdominal imaging, incidental intra-abdominal lesions (Incidentalomas) are being increasingly identified. Our objective was to characterize the clinical features of asymptomatic patients with incidentally discovered pancreatic lesions and to assess the accuracy of preoperative radiologic diagnosis against the final histologic diagnosis.

MATERIALS AND METHODS: Over a 5-year period, from 2010 to 2014, we identified 20 patients with solid pancreatic masses incidentally detected by CT. There were 12 females and 08 males, with a mean age of 60 years. We determined the indication for initial CT, analyzed the CT features, and ascertained the clinical follow-up in all the patients.

DISCUSSION: Incidentally discovered, clinically significant abdominal lesions are increasing in prevalence. Initially described in the adrenal gland, these lesions have also been encountered in the kidney and liver.\(^1\)\(^,\)\(^2\)\(^,\)\(^3\) Both renal and adrenal lesions can frequently be followed conservatively unless they are deemed to be frankly or potentially malignant in the case of liver lesions, most are clinically insignificant. Indeed, there are clearly established algorithms for incidentally discovered adrenal, renal and liver tumours in the literature. In contrast, although a variety of pancreatic tumours occur as incidental asymptomatic masses, pancreatic incidentalomas have not been described as a unique clinical entity, and there are no clearly established treatment algorithms.\(^4\)\(^,\)\(^5\)

There has recently been an increase in the reported incidence of unusual tumours of the pancreas. Many such tumours have only been well described within the last 2 decades. In the first 02 years of this study only 12 tumours were resected whereas 8 were resected in the last 3 years. Sheehan and colleagues have noted a similar trend, and it has been postulated that this change is secondary to an increase in the quantity and quality of abdominal imaging.

The management of pancreatic incidentalomas in our study was surgical. There were no deaths. Although some authors have demonstrated good results for enucleation of neuroendocrine tumours,\(^6\) that was not the approach in our series. Similarly, some have emphasized that splenic preserving distal pancreatectomy may have merit and that this operation can be done without added morbidity. At our center, we found that the preoperative radiologic
diagnosis of incidentally discovered pancreatic lesions did not always correlate with the final pathologic diagnosis. 12 out of our 20 patients had an accurate diagnosis when a differential diagnosis was based on the preoperative radiologic findings. Predicting the malignant potential of adenocarcinomas and neuroendocrine tumours of the pancreas can also be difficult. Radiologic evidence of invasion, lymph-node involvement, size greater than 2cm or metastatic spread often indicates malignant potential, but if these clinical factors are absent, the malignant potential is often unclear. Furthermore, the working diagnosis derived from preoperative imaging was unreliable in correctly predicting the surgical histopathology in our experience.

The cohort of asymptomatic patients who had incidentally discovered pancreatic lesions, majority of patients with incidentally discovered lesions were female.

The histologic diagnoses of the cohort of asymptomatic patients with incidentally identified pancreatic masses are similar to those in the literature. The most prevalent asymptomatic resected pancreatic tumour in our experience was the adenocarcinomas and neuroendocrine tumour. In recent series examining endocrine tumours of the pancreas, an increase in nonfunctional neuroendocrine tumours has been recognized (18%–66% of all cases). Some investigators believe that nonfunctional neuroendocrine tumours have a greater propensity to metastasize than their functional counterparts and suggest that all nonfunctional tumours be considered malignant. We suggest that the surgical management of such patients should be considered given that long-term survival can be achieved with surgical resection, even in the presence of locally advanced or lymph-node disease.

| Tumor Type           | Average Age | Female % | Male % | Asymptomatic | Malignant % |
|----------------------|-------------|----------|--------|--------------|-------------|
| Adenocarcinoma       | 40-70 yrs   | 35%      | 20%    | -            | 55%         |
| Neuroendocrine Tumors| 40-70 yrs   | 25%      | 20%    | -            | 45%         |

The identification of pancreatic incidentalomas appears to be increasing secondary to the broad application of high-resolution imaging. When a pathologic diagnosis is evident from the preoperative imaging in pancreatic incidentalomas, management algorithms are clear. Unfortunately, a histologic diagnosis cannot always be accurately predicted from preoperative imaging.

**RESULTS:** All of the solid masses were malignant. There were 11 adenocarcinomas and 09 neuroendocrine tumors. The most common indications for the initial CT were surveillance of an extrapancreatic malignancy (n=8), routine examination (n=4) evaluation for hematuria (n=8). On the initial CT, 12 of the patients had a clearly visible pancreatic mass. In eight patients isoattenuating masses were identified, only recognized by subtle signs including unexplained dilatation of the pancreatic duct (n=4) or minimal contour deformity or density of the pancreas.
(n=4). The mean survival time for the patients with adenocarcinoma was 21.0 months, and 40 months for the patients with neuroendocrine tumors.

CONCLUSION: Although uncommon, incidentally discovered solid pancreatic masses are malignant neoplasms, either ductal adenocarcinomas or neuroendocrine tumors.

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AUTHORS:
1. Bheemashanker

PARTICULARS OF CONTRIBUTORS:
1. Assistant Professor, Department of Radio-Diagnosis, Medi City Institute of Medical Science, Medchal, Hyderabad.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Bheemashanker,
Tirumala Hills,
Near Venkateshwar Temple,
Dilshukh Nagar, Hyderabad.
E-mail: manikumaracj@gmail.com

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