



Original article

Clinical presentation and comparison of surgical outcome for segmental resection vs. Whipple's procedure for solid pseudopapillary tumor: Report of six new cases & literature review of 321 cases



Vinayata Manuballa^{a,2}, Mitul Amin^{b,c,1}, Mitchell S. Cappell^{b,c,*,2}

^a Department of Medicine, William Beaumont Hospital, Royal Oak, MI, USA

^b William Beaumont Hospital, Royal Oak, MI, USA

^c Oakland University-William Beaumont School of Medicine, Royal Oak, MI, USA

ARTICLE INFO

Article history:

Received 10 May 2013

Received in revised form

12 September 2013

Accepted 14 November 2013

Keywords:

Solid pseudopapillary tumor
 Nonneuroendocrine pancreatic tumor
 Pancreatic neoplasms
 Surgical outcomes
 Segmental resection
 Whipple's procedure
 Surgical mortality
 Oncology
 Prognosis

ABSTRACT

Aim: Report 6 new cases of solid-pseudopapillary-pancreatic-tumor, comprehensively review 321 cases reported in American literature, and compare outcomes for segmental resection vs. Whipple's procedure. **Methods:** Cases of solid-pseudopapillary-tumor at William Beaumont Hospital, 1999–2011, identified by computerized analysis of pathology reports. Comprehensive review of all American cases identified by computerized literature review. Segmental resection includes open/laparoscopic central pancreatectomy and anatomic distal pancreatectomy, but excludes enucleation.

Results: Six cases of solid-pseudopapillary-pancreatic-tumors (0.5% of all solid pancreatic lesions), occurred during 1999–2011 at the hospital. Mean age at diagnosis = 27.7 years. All 6 were female. All patients had abdominal pain. Mean symptom duration = 10.0 days. All patients had normal routine blood tests. Mean APACHE II score at diagnosis = 1.8. All six patients had single heterogeneous lesions, with cystic/solid components. All patients underwent surgery: segmental resection-4, Whipple's procedure-2. Tumors were uniformly diagnosed by surgically resected tissue. Mean tumor size = 5.7 cm. Mean postoperative length of stay = 4.0 days for segmental resection ($N = 4$) vs. 14.0 days for Whipple's procedure ($N = 2$). All 6 patients are alive and well to-date, without evident local recurrence or metastasis. In a literature review, 45 patients undergoing Whipple's procedure versus 34 patients undergoing segmental resection, had significantly longer mean postoperative hospitalization (16.4 vs. 4.3 days, $p = 0.01$), and had increased unadjusted mortality (20.2% vs. 2.2%, $p = 0.018$). However, this mortality difference became insignificant when adjusting for longer mean follow-up of Whipple's procedure patients (Kaplan–Meier-survival-curve, $p = 0.75$).

Conclusions: This work suggests segmental resection of these pancreatic tumors localized to the body/tail may have a better surgical outcome than Whipple's procedure for tumors localized to the pancreatic head. Further studies are necessary.

Copyright © 2013, IAP and EPC. Published by Elsevier India, a division of Reed Elsevier India Pvt. Ltd. All rights reserved.

Solid pseudopapillary tumors (SPTs) are rare, comprising <1% of all solid exocrine pancreatic tumors [1–6]. Due to their relative rarity, the clinical presentation of SPTs and the clinical outcomes of their surgical procedures are incompletely characterized. Even though segmental resection is recommended for localized body/tail

lesions and radical resection (Whipple's procedure) for localized head lesions [7], it is important to understand and compare prognosis for these two surgeries to provide evidence-based guidance for patient expectations and physician follow-up. Theoretically segmental resection of body/tail tumors should offer significantly less postoperative morbidity than radical surgery for head tumors, but might expose the patient to greater risks of tumor recurrence. We report 6 new cases with long-term follow-up, comprehensively review all 321 identified cases reported in the American literature, and characterize clinical presentation, evaluation, diagnosis, and natural history of SPT. In particular, surgical outcomes are compared for segmental resection vs. radical surgery to provide new data to assess surgical outcomes.

* Corresponding author. William Beaumont Hospital, MOB 602, Division of Gastroenterology & Hepatology, 3535 W. Thirteen Mile Road, Royal Oak, MI 48073, USA.

E-mail address: mccappell@yahoo.com (M.S. Cappell).

¹ Authorship for pathology.

² Dr. Vinayata Manuballa & Dr. Mitchell S. Cappell have equal authorship.

Capsule summary/study highlights

What is previously known:

- Whipple's procedure is generally recommended for pseudopapillary tumor localized to the pancreatic head, whereas segmental resection is generally recommended for this tumor localized to the pancreatic body and tail. However, surgical outcomes for this rare pancreatic tumor, representing <1% of all solid exocrine pancreatic tumors, are incompletely characterized.

What is new here:

- Six well-documented, new cases of this tumor are reported including clinical, radiologic, endosonographic, pathologic features, and long-term patient outcome.
- Review of 321 cases in American literature revealed: mean patient age = 32.9 ± 11.5 yr; female-86%; abdominal pain in 54%; tumor size = 7.2 ± 3.7 cm; pancreatic tumor location: head-38%, body-24%, and tail-38%.
- Patients undergoing segmental resection vs. Whipple's procedure had significantly shorter postoperative hospital stay (4.3 ± 1.5 days vs. 16.4 ± 15.0 days, $p = 0.01$), with no significant difference in mean survival (mean survival = 42.0 ± 39.8 months vs. 61.3 ± 44.7 months, $p = 0.75$).
- These new data suggest segmental resection for lesions localized to the body/tail may have better surgical outcomes than Whipple's procedure for lesions localized to the pancreatic head: similar survival with shorter postoperative hospitalization, likely from the surgical procedure involved in lesion removal.

294 cases published in 27 case series [1–6,8–28], and 21 cases published as individual case reports [29–49]. Literature review was performed by computerized PubMed and Medline searches using key terms “pseudopapillary tumor”, “Frantz tumor”, or “pseudopapillary epithelial neoplasm”; and by examination of standard textbooks and specialized monographs in gastroenterology, pancreatology, and pathology. APACHE (Acute Physiology and Chronic Health Evaluation)-II scores were calculated as an index of severity of medical disease [50]. All patients reported in the 27 published case series and in the 21 individual case reports were evaluated. Of these 321 evaluated patients, only 79 patients were included in survival analysis of segmental resection vs. Whipple's procedure; other patients were excluded because of incomplete description of surgical technique, medical therapy without surgery, use of other surgical therapy (e.g. enucleation), or post-operative follow-up <12 months. Segmental tumor resection included open or laparoscopic procedures: central pancreatectomy, and anatomic distal pancreatectomy, with or without splenectomy. Tumor enucleation was excluded and not analyzed.

Immunohistochemical studies are listed in Appendix I. For ultrastructural analysis in patient 6, tumor sections were fixed in 2.5% cold buffered glutaraldehyde, postfixed in osmium tetroxide, embedded in resin, sectioned, stained with uranyl acetate and lead citrate, and examined via transmission electron microscopy (Philips models 201 & 208, Amsterdam, Holland).

Categorical variables were analyzed by Chi square test or by Fisher's exact test, depending on cell size. Continuous variables were analyzed by Student's *t* test or Kruskal–Wallis test. All *p* values were 2-tailed. Confidence intervals of 95% (95%-CI) for odds ratio (OR) were calculated by method described by Fleiss [51]. This study was approved by the Institutional Review Board of William Beaumont Hospital of Oakland University-William Beaumont School of Medicine, which is one of the five largest, single-standing hospitals in the United States [52].

1. Methods

Computerized analysis of pathology reports at William Beaumont Hospital, Royal Oak, Michigan from January 2003–July 2011 identified 6 patients with pancreatic SPT. Data were extracted retrospectively by comprehensive medical chart review. The 6 patients were compared with 321 cases in United States, including

2. Results

2.1. Six newly reported cases

Epidemiology, symptoms, comorbidities, and laboratory abnormalities in the 6 patients are reported in Table 1. Patients averaged 27.7 ± 12.5 yrs at diagnosis (range 16–45 yrs). All patients were

Table 1
Clinical characteristics in six patients diagnosed with solid pseudopapillary pancreatic tumor.

Parameter	1	2	3	4	5	6
Age in years, sex	19, F	16, F	18, F	27, F	41, F	45, F
Race	Caucasian	Caucasian	Asian	Caucasian	African - American	Caucasian
Symptoms	Abdominal pain exacerbated by eating & movement, nausea & vomiting, weight loss, fatigue, night sweats	Abdominal pain exacerbated by movement, back pain, nausea & vomiting	Abdominal pain, fever, nausea & vomiting	Abdominal pain	Abdominal pain radiating to left flank, nausea & vomiting	Abdominal pain
Duration of symptoms (days)	14	1	1	28	2	14
Medical conditions	Asthma	Asthma	None	Nephrolithiasis, gastroesophageal reflux	None	Hypertension, hyperlipidemia
Liver function tests	NI	NI	NI	NI	NI	NI
Amylase	NI	NI	NI	NI	NI	NI
Lipase	NI	NI	NI	NI	NI	NI
CEA (NI: 0-3.0 ng/mL)	ND	0.5	ND	0.7	ND	ND
CA 19-9 (NI: 0-37 U/mL)	ND	25	ND	6.6	11.3	ND
APACHE II score at clinical presentation	3	0	4	0	0	4

F = female, NI = normal, ND = not done, CEA = carcinoembryonic antigen, CA 19-9 = carbohydrate antigen 19-9, APACHE II = acute physiology and chronic health evaluation II.

Download English Version:

<https://daneshyari.com/en/article/3317124>

Download Persian Version:

<https://daneshyari.com/article/3317124>

[Daneshyari.com](https://daneshyari.com)