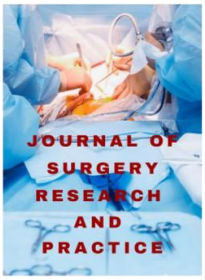

e-ISSN: 3068-3742
Journal of Surgery Research and Practice

ATHENAEUM SCIENTIFIC PUBLISHERS

Case Report

Solid Pseudo Papillary Neoplasm of the Pancreas in a 45-Year-Old Woman: A Case Report

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Citation: Vinay HG, et al. Solid Pseudo Papillary Neoplasm of the Pancreas in a 45-Year-Old Woman: A Case Report. J Surg Res Prac. 2024;5(2):1-5.

https://doi.org/10.46889/JSRP.2024/5205

Received Date: 03-06-2024

Accepted Date: 24-06-2024

Published Date: 01-07-2024

Abstract

We present a distinctive case of solid pseudo papillary neoplasm as seen in a 45-year-old woman with no personal history of interest, presented with entire pancreatic tissue appears oval large globular mass measuring 12.0 x 8.0 x 6.0 cms. Pancreatic mass shows appear variegated with solid grey-brown areas, necrosis and hemorrhagic areas noted. Also seen are cystic areas with necrosis and mucin with Calcification. Spleen measuring 8.0 x 7.0 x 5.0 cms, the mass appears congested. Her symptomatology such as complaints like abdominal pain. It was discovered that she possessed a significant mass covering the pancreatic body and tail, exhibiting typical physical and histological characteristics. She subsequently had a successful surgery and she is currently in remission.

Keywords: Calcification; Solid Pseudo Papillary Neoplasm; Necrosis; Pancreas

Introduction

Frantz's tumor, also known as solid pseudo papillary neoplasm, is an uncommon condition that makes up 0.2-2.7 percent of all pancreatic tumors [1]. The majority of patients are female and in their second or third decade of life; very few involve children [2]. They are often discovered by accident, showing up as a slowly expanding abdominal mass with vague symptoms like soreness in the abdomen. With a prevalence of malignant transformation of around 15%, surgical excision is the preferred treatment for this low-grade malignant tumor, which offers a favorable long-term prognosis [3]. 90% of SPN cases occur in adolescent and young adult females, indicating a strong female inclination [4]. Progesterone receptors and the predominance of SPN in young females at the start of the reproductive period suggest that female hormones play a role in the formation of this tumor [5]. We discuss the case of a 45-year-old woman who presented with an abdominal mass and was subsequently diagnosed with SPN.

Case Report

A 45-year-old woman symptomatology such as complained like abdominal pain. With no significant past medical history and otherwise in good health, Fig. 1 presented with entire pancreatic tissue appears oval large globular mass measuring 12.0x8.0x6.0 cms.

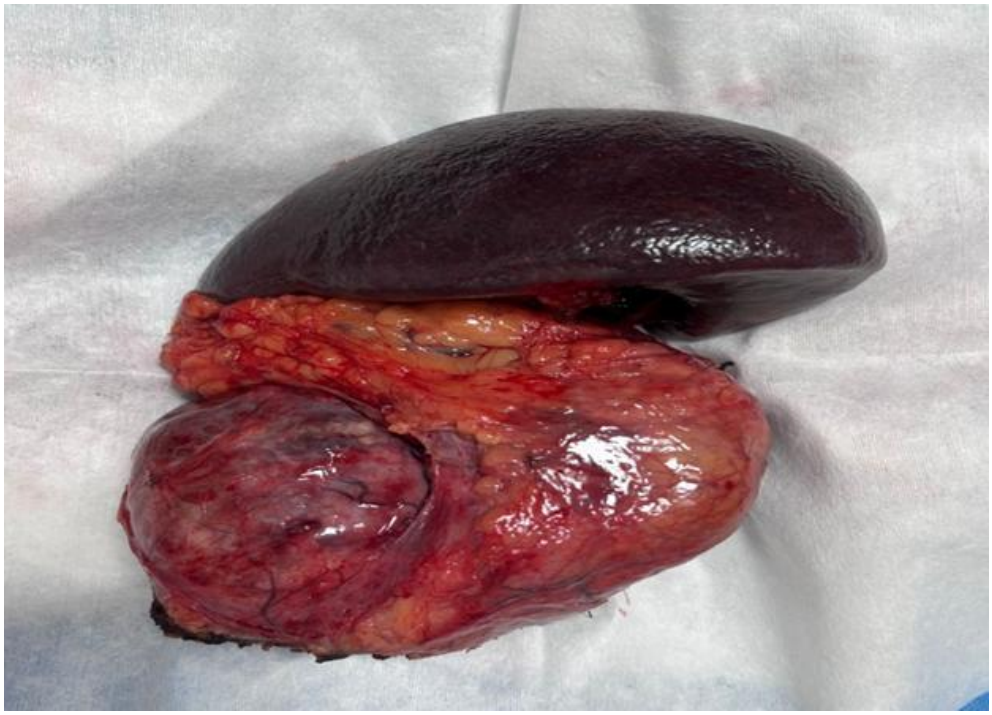

Figure 1: 12.0x8.0x6.0 cms pancreatic mass attached to the colon and intact spleen.

Findings on gross examination, large heterogeneous lesion were seen in left hypochondrium. Well defined soft tissue density lesion measuring 12.9 x 11.3 x 7.5 cm noted, involving the distal body and tail of pancreas. Few calcifications noted within it. The lesion shows heterogeneous enhancement of post contrast study -Neoplastic etiology. Pancreatic mass showed appears variegated with solid grey-brown areas, necrosis and hemorrhagic areas noted. Also seen are cystic areas with necrosis and mucin with Calcification. Surrounding pancreatic tissue noted. Lymph nodes isolated at the hilum of spleen, largest measuring 0.5 cm. Computerized tomography Fig. 2,3 demonstrated a large heterogeneously enhancing solid and cystic lesion measuring 11.9 x 6.5 x 8.8 cm arising from the distal body and tail of pancreas showing coarse central calcifications. It is causing mass effect on the left adrenal gland. Splenic vessels are displaced and coursing along the inferior margin of the lesion. No evidence of pancreatic duct dilation.

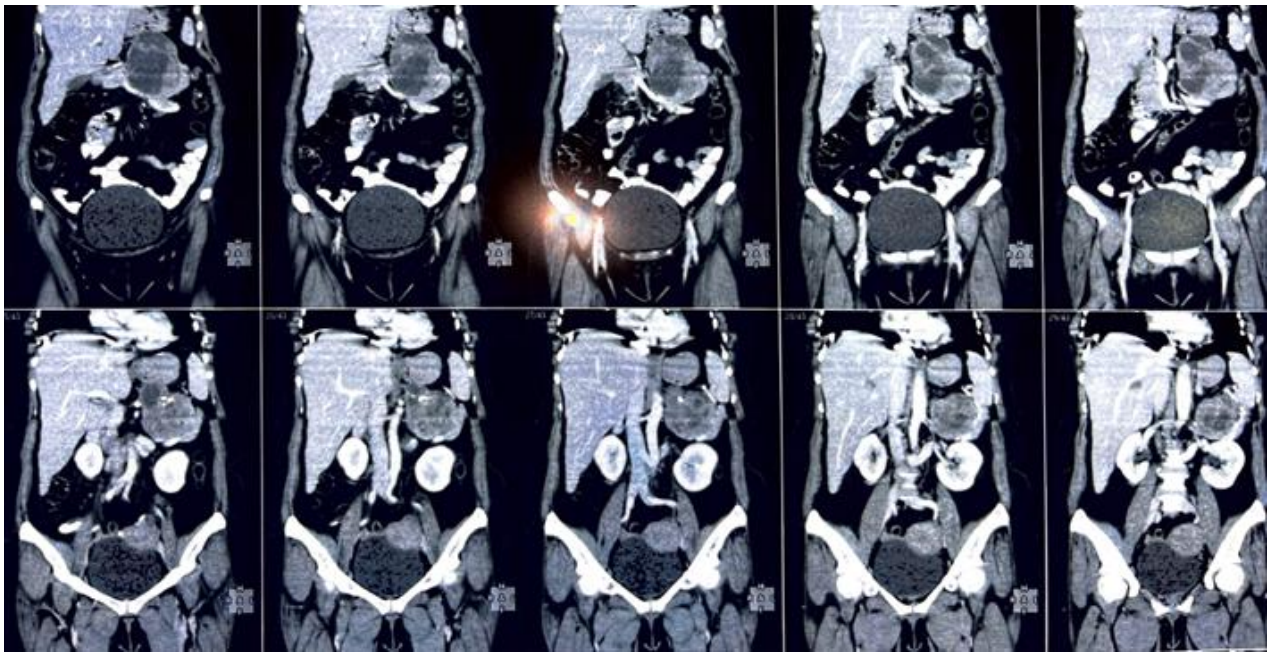

Figure 2: Large solid-cystic mass with calcifications, distorting pancreas.

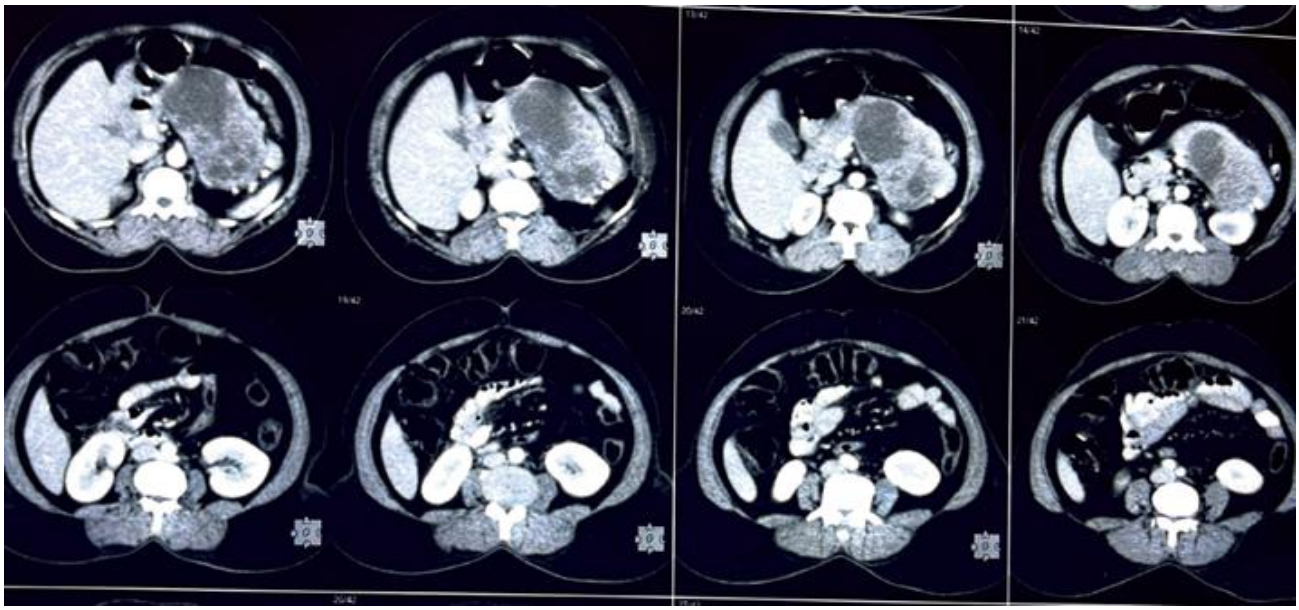

Figure 3: Large mass originating from the body and tail of the pancreas.

On physical examination, temperature was 98.6, Pulse: 88 bpm, BP: 110/90 mm hg, SPO2: 97%. Tenderness present in left lumbar region and left hypochondrium. The patient was diagnosed with solid pseudo-papillary neoplasm of pancreas. Pre anesthetic evaluation was done. Procedure was done with exploratory laparotomy, subtotal pancreatic resection with splenectomy and retroperitoneal in dissection. After diagnosed by Cardiologist and physician, patient was shifted to MICU started on IVF, IV antibiotics and other supportive treatment. 1-pint PRBC was transfusion done, oral feeds were started on POD-2 and patient was well tolerated. RT and catheter removed on POD2 and drain removed on POD4. On microscopic examination, multiple sections studied shows pancreatic tissue with tumors exhibiting heterogeneous, variable admixture of solid and pseudo papillary areas. The solid areas are comprised of uniform cells admixed with capillary sized blood vessels. Pseudo papillae areas show tumor cells detached from blood vessels forming fibro vascular stalks or rosette-like structures. Stroma shows various degrees of hyalinization, degeneration, such as hemorrhage, foamy macrophages, calcification and cholesterol clefts. Fig. 4, the tumor cells have a moderate amount of eosinophilic cytoplasm and perinuclear vacuoles. Relatively uniform nuclei with fine chromatin, inconspicuous nucleoli and longitudinal grooves and occasional mitosis. Tumor is seen infiltrating into the surrounding pancreatic tissue. I-A: Section from pancreatic margin is free of tumor. I-C1: Section from spleen shows congestion. I-C2: Section from the vessel appears unremarkable. I-D: Sections studied shows 6 lymph nodes with reactive change. I-E: Sections studied shows fibro adipose tissue with congestion. II-F: Sections studied shows 3 lymph nodes with reactive change.

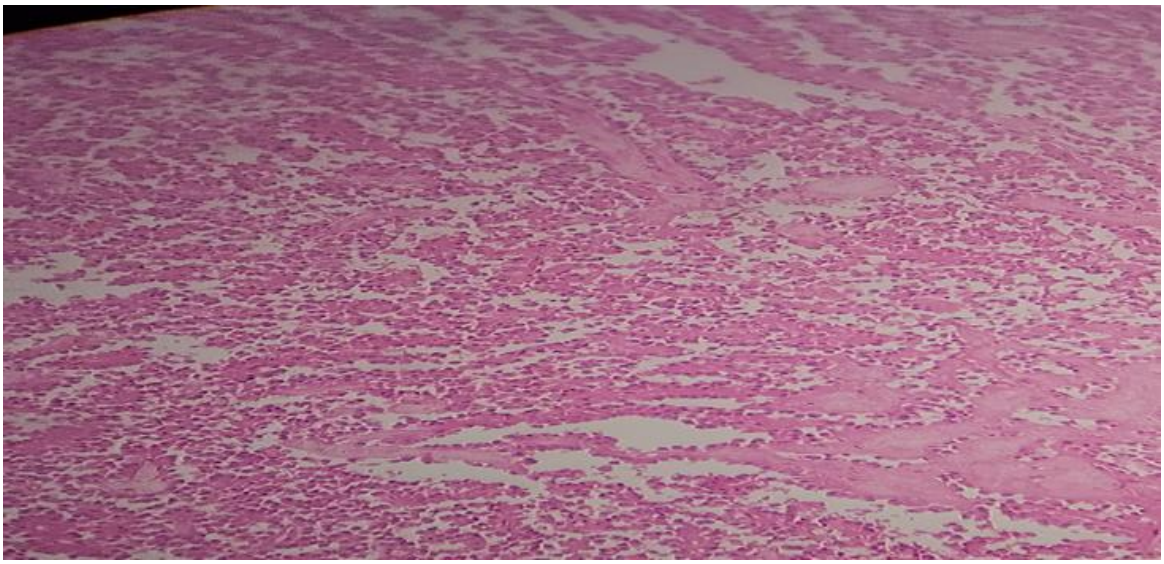

Figure 4: Tumor cells have a moderate amount of eosinophilic cytoplasm and perinuclear vacuoles.

PET CT Scan was done, heterogeneously enhancing solid and cystic lesion arising from the distal body and tail of pancreas showing coarse central calcifications causing mass effect on the left adrenal gland-of neoplastic etiology, likely representing pancreatic cystadenocarcinoma. No significant pancreatic lymph nodes were seen, No any evidence of hepatic, pulmonary or skeletal metastases.

The patient was discharged after five days in a satisfactory condition with advice and post treatment such as; high fiber diet avoids spicy food, maintain hygiene, regular dressing and adequate physical activity. No adjuvant therapy was given. The postoperative recovery was significant. The patient has been followed up for over 1-month without any evidence of recurrence.

Discussion

SPN is an uncommon pancreatic exocrine tumor with a low risk of cancer and a fair prognosis which recurs infrequently after removal [6-8]. Also referred to as Frantz's tumor, it was first identified as a papillary-cystic pancreatic tumor in a 2-year-old male patient by Dr. Virginia Kneeland Frantz in 1959 [9]. In 1996, the WHO classified it. Despite being uncommon, an increasing number of instances are becoming public due to breakthroughs in imaging techniques. Research conducted by Law, et al., revealed 2744 patients with SPN, of which over 87% were reported after 2000 [10]. This represents a seven-fold increase in cases recorded between 2000 and 2012 compared to the period from 1961 to 1999, with men accounting for 12.2% of the cases. This indicates greater knowledge and improved diagnostic tools rather than necessarily a rise in occurrence.

In the English literature at the time, 718 reported instances of SPN were examined in the review by Papavramidis [11]. The tumor's entire range was found to be between 0.5 and 34.5 cm, with a mean diameter of about 6.08 cm. They also emphasized the tumor's preference for female gender, with a female to male ratio of 9.78: 1. The pancreatic body and tail continue to be the most frequent sites [12]. These tumors have numerous microscopic blood arteries that are not maintained and start off as solid masses, which leads to the formation of the pseudo papillary pattern [13]. The cells closest to the vessels remain intact, resulting in characteristic cystic alterations and creation of the classic pseudo papillary pattern associated with the tumor, while the cells furthest from the vessels incur necrosis owing to nutrient deprivation. Therefore, cystic alterations are uncommon in SPN and are typically observed in larger masses that have outgrown their blood supply and experienced necrosis and degenerative changes [14].

Beltrame, et al., conducted a single-institution study on 451 patients with pancreatic cystic tumors [15]. Of these, 18 (3.7%) had pancreatic SPN based on histological analysis and only one patient had an elevated serum CA 19-9 level of 92 U/ml (normal range: 0 to 37 U/ml). The majority of cancers are discovered by accident during imaging. Surgical tumor enucleation or excision is nearly invariably curative [16]. Although metastatic disease is uncommon, its presence does not preclude surgical excision [17]. Long-term disease-free survival is nevertheless compatible with resection of metastases, either in addition to or instead of resection of the main. The liver is the most often metastasized location [18].

An analysis of 16 male SPN patients revealed that, compared to female patients, the male patients were older and had a better prognosis following surgery, with no deaths or recurrences during the follow-up period. By comparison, a recent study conducted by Wu, et al., [19]. Even when there is local invasion or distant metastasis, the cornerstone of treatment for every patient with SPN is complete surgical resection. Over 95% of patients survive for at least five years. Aggressive early therapy provides great long-term survival even in cases of severe disease [20].

Conclusion

SPN is an uncommon pancreatic tumor that primarily affects young girls and has a very good prognosis. It is yet unclear what causes the tumor and how women are more susceptible to it, therefore more research is necessary to fully understand the mechanisms involved.

Data Availability

Data is available on the patient’s medical records.

Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this article.

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