cells ($p<0.05$). Mean nuclear ploidy (MNP) of normal acinar cells was 2.4c, of endocrine cells–2.21c. Most of the SPPT cells were diploid (43 %), whereas ET cell were predominantly triploid (38 %). MNP of ET was 3.49c, SPPT–2.59c. Proliferation index (PI) of SPPT cell was 3 times higher than of acinar cells, PI of ET cell was 7 times higher than of endocrine cells. Aneuploidy coefficient of SPPT was 0.04 and of ET–0.78.
Conclusion: Nuclear morphometric parameters, nuclear ploidy, aneuploidy coefficient and proliferation index could be used as the additional criteria for SPPT and ET differential diagnosis.

PS-20-029
Intraductal papillary mucinous neoplasms of the pancreas: Report of seven cases
E. Kairi-Vasilatou*, C. Dastamani, A. Tsagkas, E. Carvounis, A. Kondi-Pafiti
*Aretaieion University Hospital, Dept. of Pathology, Athens, Greece

Objective: Intraductal papillary mucinous neoplasms (IPMNs) are neoplasms of the pancreatic duct epithelium characterized by intraductal papillary growth and thick mucin secretion, arising in the main pancreatic duct or its branches. They are usually located in the head of the pancreas and can display various degrees of dysplasia.
Method: Over a 5-year period, seven cases of pancreatic IPMNs were diagnosed in our laboratory in a total of 238 pancreatectomy specimens examined (2.9 %).
Results: Patients' age was 57–74 years (mean age 68.8 years). Six were male (85 %) and one was female (15 %). Two patients (28.5 %) underwent a total pancreatectomy, and five (71.4 %) had a partial pancreatectomy. Invasive carcinoma was present in one patient (14.2 %) In 4/5 cases of partial pancreatectomy (80 %), the pancreatic transection margin was involved with atypia. The main pancreatic duct was involved in 6/7 cases (85 %). Microscopically, the pancreatic duct was cystically dilated and displayed complex papillary fronds of mucin-producing epithelial cells with variable atypia. The surrounding pancreatic parenchyma showed mild to moderate fibrosis and acinar atrophy, typical of obstructive chronic pancreatitis.
Conclusion: Though IPMNs without an associated invasive carcinoma have excellent prognosis, the prognosis for IPMN-associated invasive carcinomas is worse, but overall better than that of pancreatic ductal adenocarcinomas.

PS-20-030
MUC2 and MUC6 glycoproteins expression may be useful for differentiate the intestinal and gastric histological types of intraductal papillary-mucinous neoplasm and may indicate different pathways in pancreatic carcinogenesis
S. Teresa*, L. Perez-Casanova, M. Terricabras, C. Villabona, C. Valls, J. Busquets, E. Condom, M. Paules
*Hospital De Bellvitge. Idibell, Pathology, Barcelona, Spain

Objective: Intraductal papillary-mucinous neoplasm (IPNM) are classified into main duct and branch duct and non invasive IPMNs were mostly intestinal or gastric types. Mucins could play a key role in pancreatic carcinogenesis.
Method: We examined 22 consecutive cases of non invasive IPMNs. Immunohistochemistry studies for MUC2, MUC 6 and MUC5a mucins, CK7, CK20 and CDX2 were evaluated.
Results: Sixteen of the 22 non invasive IPMNs were main duct IPMNs. Seven were intestinal-type and were positive for MUC2, CK20 and CDX2 and negative for MUC6 and CK7, and 6 were gastric type and positive for MUC 6 and CK7 and negative for MUC2 and CK20. Six of the 22 non invasive IPMNs were categorized as branch duct subtype. Four were intestinal type small lesions and were positive for MUC2 and showed variable expression of CK20, and 2 were gastric type multilocular cyst lesions and were positive for MUC6 and negative for MUC2 and CK20.
Conclusion: The immunohistochemistry expression profile may help to separate the intestinal MUC2+/MUC6- from the gastric MUC2-/MUC6+ type of non invasive IPMNs and supports the notion that there is an intestinal pathway distinct from the gastric pathway in IPMN carcinogenesis.

PS-20-031
Intraductal tubulopapillary neoplasm of the pancreas: Part of the spectrum of intraductal neoplasms of the pancreatobiliary system
H. Rodrigues*, C. Oliveira, N. Dias, D. Oliveira, M. A. Cipriano, M. F. Xavier Cunha
*CHUC, Anatomia Patológica, Pardilhó, Portugal

Objective: Intraductal tubulopapillary neoplasm (ITPN) is a recently recognized rare variant of pancreatic intra-ductal neoplasm.
Method: A 54 years old male presented with epigastric pain, steatorrhea, diabetes mellitus and 5Kg weight loss in 2 months. CT scan: solid, nodular, heterogeneous mass in the cephalic pancreas. Gross examination showed a multinodular solid well circumscribed tumour with 5.7 cm involved by a firm stroma. Histologically was represented by intraductal monotonous growth, composed of tightly packed small tubules lined by cuboidal cells with high-grade dysplasia, without mucin production. The main differential diagnoses are intraductal papillary mucinous neoplasms and other tumours with intraductal growth pattern: acinar cell carcinoma, neuroendocrine tumours, and ductal adenocarcinoma (DAC).
Results: ITPN has an indolent course. No correlation was found between invasion and prognosis, and even with lymph nodes or liver metastasis the prognosis is better than DAC. One of the major problems is to assess invasion due to the complexity of the intraductal pattern. Common molecular findings: DPC4 retained in 90 %; p53 overexpressed in 20 % and p16 in 50 %.
Conclusion: ITPN is a malignant neoplasm with protracted clinical course. Extensive sampling is necessary to exclude invasion. Diagnostic key features: macroscopic solid multinodular tumour, tubulopapillary growth pattern and absence of mucin secretion and acinar differentiation.

PS-20-033
Morphological evaluation of margins and R-status in ductal pancreatic cancer
O. Paklina*, G. Setdikova, O. Potapova
*Burnazyan FMBC of FMBA Russia, Dept. of Pathology, Moscow, Russia

Objective: To systematize the line of "resection margin" in PDA and evaluate prognostic significance of regional lymph nodes involvement and perineural invasion for the patients with PDA.
Method: 55 patients with PDA located in the head of pancreas. R1 was stated in cases with the tumor complexes presented at the distance from the resection margin < or = 1 mm.
Results: R1 status in PDA was determined in 69.1 % (38/55). Most frequent affection was seen in the anterior and middle margins–14.5 % and 9 % (8/38 and 5/38). This type of tumor spreading we associated with the direct extension. Intrapancreatic PNI developed in 76.4 % (42/55), extrapancreatic PNI was found in 29.1 % (16/55). Regional lymph nodes involvement was found in 67.3 % (37/55) of the series. Both types of PDA spreading should be classified as locoregional spreading. Thus, only in 7.3 % (4/55) of cases neither tumor spreading beyond the pancreas. Most cases, 50.9 % (28/55), developed the mixed type of tumor invasion.
Conclusion: In PDA the allocated locoregional and mixed types of spreading should be kept in mind along with the direct spread of the tumor. The aim to increase the proportion of R0 resections is considered to be impossible without improvement and standardizing of pathological examination protocols.

PS-20-034
Loss of PTEN expression in tumor microenvironment correlates with aggressive behaviour and detects synergistic roles of tumor and stromal cells in Pancreatic Ductal Adenocarcinoma (PDAC)
E. Karamitopoulou*, I. Zlobec, A. Lugli, B. Gloor, A. Perren
*University of Bern, Institute of Pathology, Switzerland

Objective: PTEN is a major tumor suppressor in PDAC. Our aim was to determine the role of PTEN in PDAC progression and correlate PTEN alterations with clinico-pathological features of the patients.
Method: PTEN-Immunohistochemistry was performed on a multipunch Tissue Microarray (TMA) of 120 well-characterized PDACs with full clinico-pathological, follow-up and adjuvant therapy information. PTEN-immunoreactivity was evaluated in the tumor- and the stromal cells. Another 3 TMAs including precancerous lesions (PanINs), matched lymph node metastases and normal pancreas were additionally stained.
Results: We found a significant progressive PTEN loss from normal ductal epithelia (21.5 %) to PanINs (13 %) and to PDAC (6.2 %) ($p<0.0001$). PTEN loss in tumor cells was associated with higher tumor grade ($p=0.0338$) and marginally with higher T-stage ($p=0.0596$). PTEN loss in the stromal cells was strongly associated with distant metastasis ($p=0.0045$) and showed a trend towards worse overall ($p=0.0791$) and disease-free survival ($p=0.066$).
Conclusion: PTEN loss in PDAC may play an important role in the neoplastic progression and seems to correlate to a more aggressive phenotype. Moreover, loss of PTEN in the neoplastic stroma shows a strong association with distant metastasis, suggesting that the stromal cells are actively participating in the process of pancreatic cancer dissemination.

PS-20-035
MYC gene abnormalities in ampulary carcinoma and ductal adenocarcinoma of the pancreas
O. Paklina*, G. Setdikova
*Burnazyan FMBC of FMBA Russia, Dept. of Pathology, Moscow, Russia

Objective: MYC amplification in pancreatic ductal adenocarcinoma (PDA) and ampulary carcinoma (AC).
Method: 74 cases of PDA, 22 cases of ampulary carcinoma (AC). Age of patients ranged from 30 to 78 years. We examined the expression of MUC1, 2 and 5AC types in PDA and AC and fluorescent in situ hybridization.
Results: Most of the PDA have been reported as–MUC1 +/MUC5AC + and accounted for 42 % (31/74), the smallest was a group with the intestinal mucin phenotype (MUC2 +) (7 % (5/74). AC in most cases have been reported as MUC2 + and accounted for 63 % (14/22), 37 % (8/22) of cases the tumor presented as MUC1 +/MUC5AC +. FISH analysis of PDA revealed of MYC gene copy number in 21/74 (28 %) cases. 8/74 pancreatic tumors (10,8 %) revealed MYC gain in association with an increased chromosome 8 copy number. AC profile MYC gene is diploid.
Conclusion: MYC gene amplification should be considered as a marker of a more aggressive behavior in cancers biliary pancreaticduodenal region. Diploid profile MYC gene in ampulary carcinomas indicates a more favorable prognosis compared with ductal adenocarcinomas of the pancreas.

PS-20-036
Mucin expression in pancreatic ductal adenocarcinoma: Immunohistochemical examination in EUS-FNAB specimens
M. Higashi*, Y. Goto, S. Yonezawa
*Kagoshima University, Dept. of Human Pathology, Japan

Objective: We aimed to detect predictive markers in EUS-FNAB specimens of pancreatic ductal adenocarcinoma (PDAC).
Method: Expression of mucins (MUC1/DF3, MUC2, MUC4/8G7, MUC5AC, MUC6, MUC16/M11) and labeling of MIB-1/Ki67 were examined by immunohistochemistry of the EUS-FNAB specimens from 109 patients. Mucin expression of PDAC was considered "positive" if more than 10 % of carcinoma cells were stained. MIB-1/Ki67 labeling was considered "high" if more than 50 % of carcinoma cells were labeled. The mucin expression and Ki67 labeling were compared with clinicopathological features in each patient.
Results: The expression rates of each mucin were as follows: MUC1/DF3, 88.0 %; MUC2, 0.9 %; MUC4/8G7, 94.4 %; MUC5AC, 78.0 %; MUC6, 24.7 %; and MUC16/M11, 67.0 %. The prognosis of patients with MUC16 positive was significantly poorer than those with MUC16 negative. The prognosis of patients with high Ki67 labeling was significantly poorer than those with low Ki67 labeling.
Conclusion: MUC16 expression and Ki67 labeling are predictive factors of PDAC.

PS-20-037
Undifferentiated carcinoma of the pancreas with osteoclast-like giant cells: Report of two cases
S. Chaves*, M. J. Fernández-Aceñero, A. Cazorla, T. Ranchal, J. I. Cornejo
*Fundacion Jimenez Diaz, Surgical Pathology, Madrid, Spain

Objective: To report two cases of pancreatic undifferentiated carcinoma with osteoclast-like giant cells.
Method: Both patients were women (aged 62 and 71). One consulted on vague abdominal discomfort and the other was asymptomatic. Imaging studies revealed an abdominal mass.
Results: In the first patient diagnosis was made in a gastric endoscopic biopsy, but surgical pancreatoduodenectomy revealed that the tumor arose in the pancreas and measured 17×15×10 cm. The second patient had a preoperative diagnosis of pancreatic carcinoma and the tumor was a 5×4.2×3, partially cystic mass in the pancreatic head. Histology revealed undifferentiated tumors composed of pleomorphic to spindle cells and osteoclast-like giant cells, with areas of necrosis and haemorrhage. Spindle cells expressed CK 7, AE1/AE3; giant cells, EMA, CD 45, CD 68, CD 56; and both components, CD 117, p53 and p16. Diagnosis was undifferentiated carcinoma with osteoclast-like giant cells.
Conclusion: Undifferentiated carcinoma of the pancreas with osteoclast-like giant cells is a rare neoplasm. The mean age is 60 years. The mean survival was 12 months, a more favourable prognosis than usual ductal adenocarcinoma. This histological type is rare outside the pancreas and its presence in any location should awake suspicion of this primary origin.

PS-20-038
Metastasis to the pancreas and the spleen: An increasing diagnostic and therapeutic challenge
S. Chaves*, M. J. Fernández-Aceñero, M. Abengózar, P. Wolfgang, T. Ranchal, J. I. Cornejo
*Fundacion Jimenez Diaz, Surgical Pathology, Madrid, Spain

Objective: The objective of the present report is to review the cases of pancreatic and splenic metastasis diagnosed at a single center between 1998 and 2010.
Method: We have reviewed the electronic biopsies database files of the Department of Surgical Pathology, Fundación Jim'nez Daz in Madrid (Spain).
Results: We have found four pancreatic metastasis and five splenic metastasis. Two of the pancreatic metastasis were originated in clear cell renal cells carcinomas. The other pancreatic metastasis were from a malignant cutaneous melanoma diagnosed and treated 8 years before and from a cervical squamous cell carcinoma treated with surgery and radiotherapy. Three of the splenic metastasis were diagnosed during abdominal surgery for primary therapy of the tumor (two ovaries and one endometrium), while the remaining two corresponded to metastasis from a lung and colonic tumors. The patients with splenic metastasis died on the short term with progression of the disease despite the resection of the splenic lesions, while the patients with pancreatic metastasis have survived longer.
Conclusion: Our experience seems to fit to the reported literature regarding tumor types and outcome of the patients. According to the present literature metastasectomy is indicated to improve prognosis of these patients.

PS-20-039
Inflammatory polyp of the gallbladder containing intestinal metaplasia
F. Yilmaz*, A. Kilitci, N. Sengül
*Abant Izzet Baysal University, Medicine Faculty, Bolu, Turkey