

Pancreatic Cytopathology

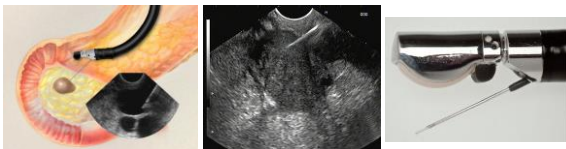
Solid Lesions

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Fine Needle Aspiration of the Pancreas

- 60-80% of FNA diagnoses are **MALIGNANT**
 - 85-90% are ACA



Pancreatic Cytopathology

The "Fear Factor"



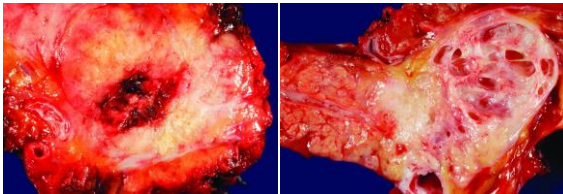
- ~ 10% of Whipple surgeries performed for presumed malignancy (clinical and/or FNA findings) reveal benign disease on histopathology
- ~ 25% of these have autoimmune pancreatitis (AIP) or lymphoplasmacytic sclerosing pancreatitis (LSP)

Solid Neoplasms Of The Pancreas

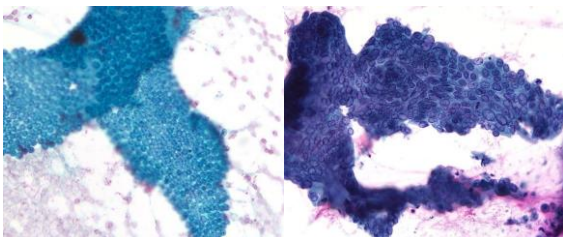
[Exocrine Pancreas]

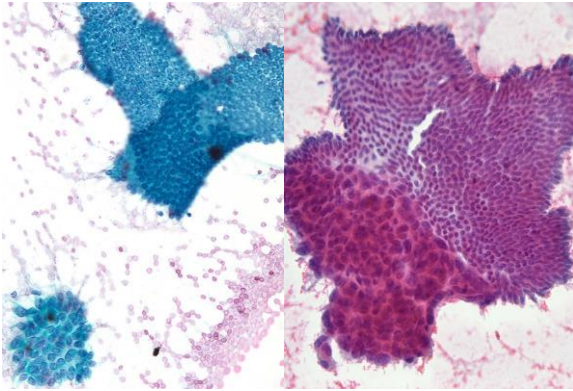
- Ductal Adenocarcinoma
- Variants
- Acinar Cell Carcinoma
- Pancreatoblastoma

Ductal Adenocarcinoma

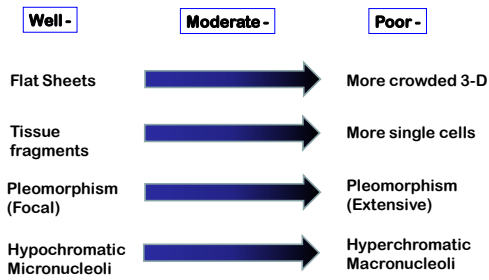


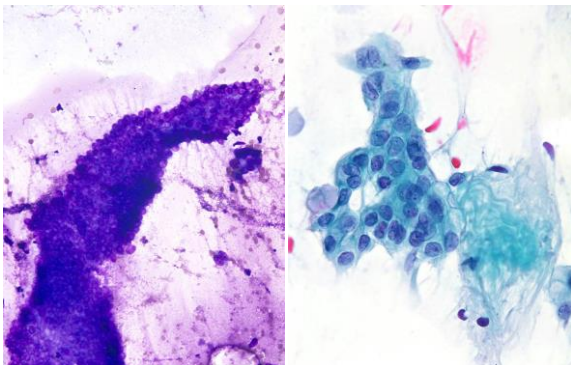
Ductal Adenocarcinoma

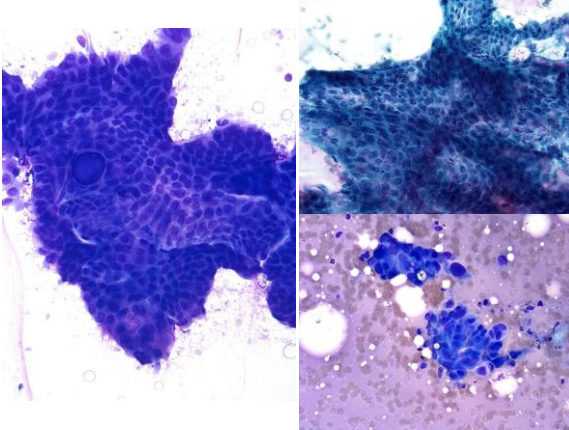


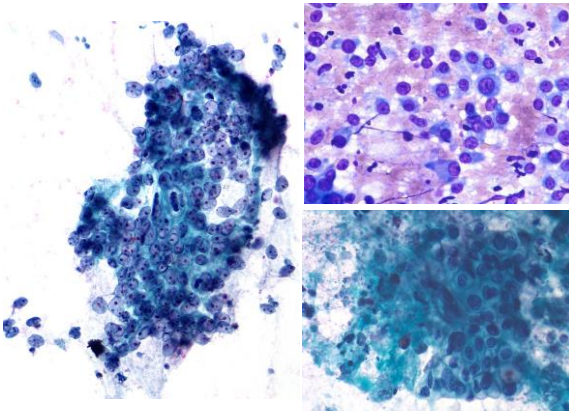


ACA – Cytologic Grading





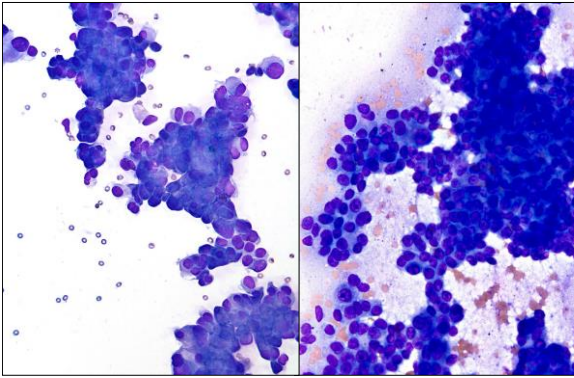




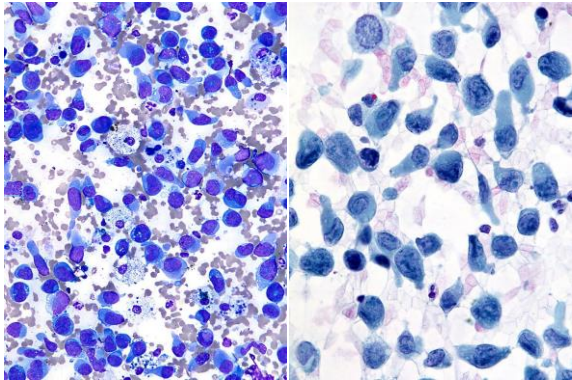
Why do we grade?

- Fine-tune our diagnosis and differential diagnoses
- Optimize cancer therapy
- Prognostication (indicator of poor outcome in resectable disease)

- Grading should preferably be two tiered (not five)



Grade?

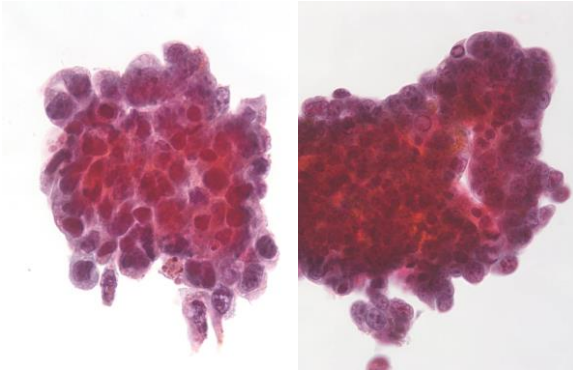


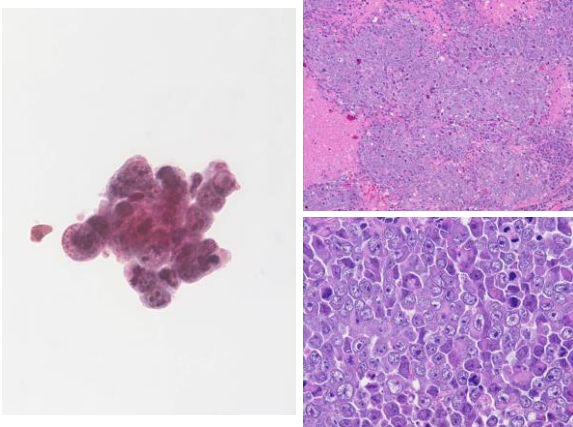
Grade?

Ductal CA - Variants

- Colloid (Mucinous Non-cystic) Carcinoma
- Signet-ring Cell Carcinoma
- Medullary Carcinoma
- Adenosquamous Carcinoma
- Undifferentiated Carcinoma With Osteoclast-like Giant Cells
- Anaplastic (Undifferentiated) Carcinoma

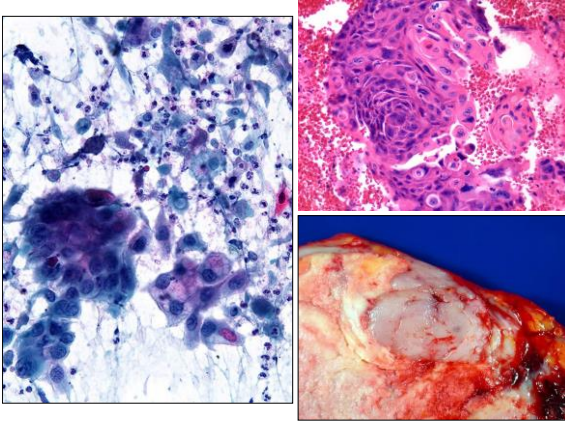


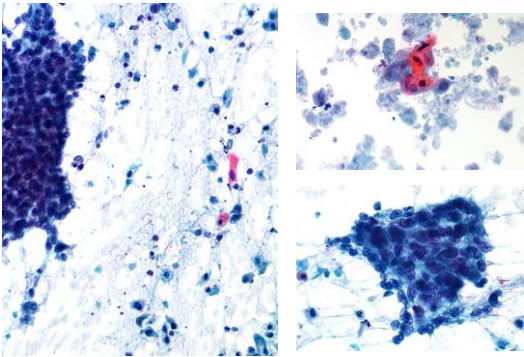




Adenosquamous Carcinoma

- 2% of all pancreatic cancers
- M:F, 2:1, mean age 65y
- >30% squamous differentiation
- Relationship to ionizing radiation
- More common in body/tail
- Often has necrotic/cystic areas
- More aggressive median survival-9mo
- DD-Mets

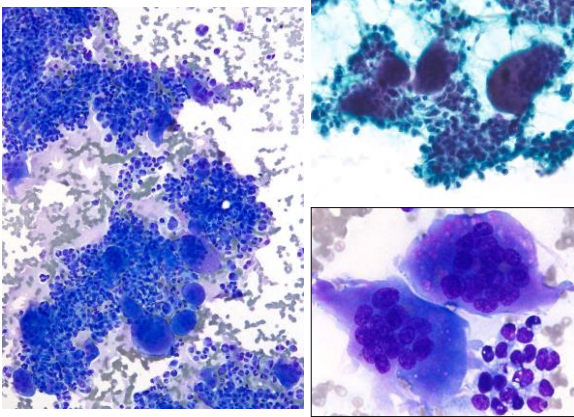


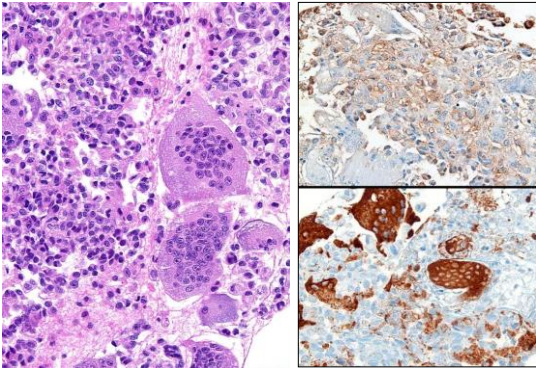


- > Poorer Prognosis - median overall survival – 9 mo
- > The proportion of squamous differentiation is often not associated with median overall survival (< 30% versus > or = 30%)

Undifferentiated Carcinoma with Osteoclast-like Giant Cells

- Mean age – 62y (32-93)
- Common denominator – OGCs (>20nuclei)
- Round to spindle mononuclear malignant cells in the stroma
- Similar tumors – ampulla, gall bladder, EH bile ducts
- Some cases have associated in-situ or invasive CA
- Poor prognosis, mean survival < 12mo

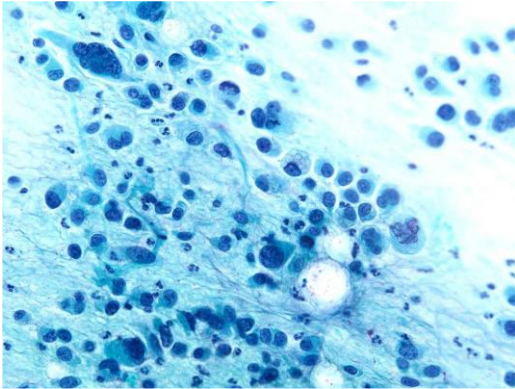


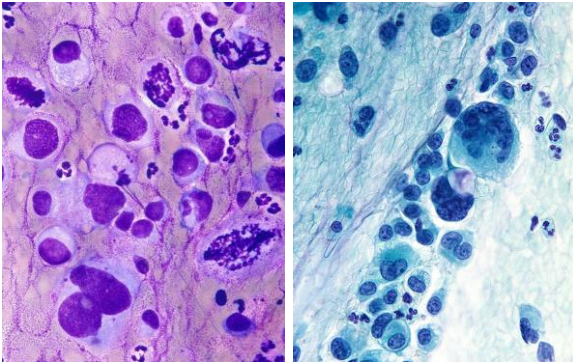


- Often a component of an in-situ or invasive ACA
- Poor prognosis (< one year)

Anaplastic (undifferentiated) Carcinoma

- Usually elderly, presents with widely disseminated disease
- No evidence of any specific differentiation
- Includes – carcinosarcoma, sarcomatoid CA
- Extremely poor prognosis
- DD – Rule out mets

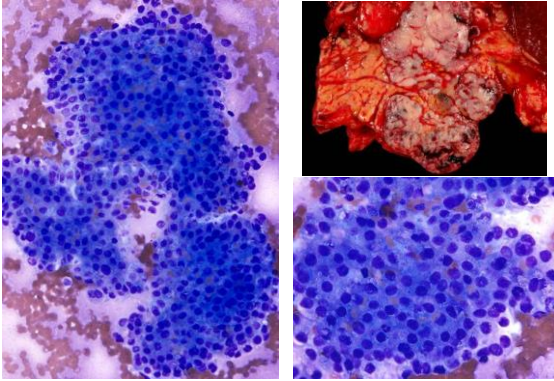


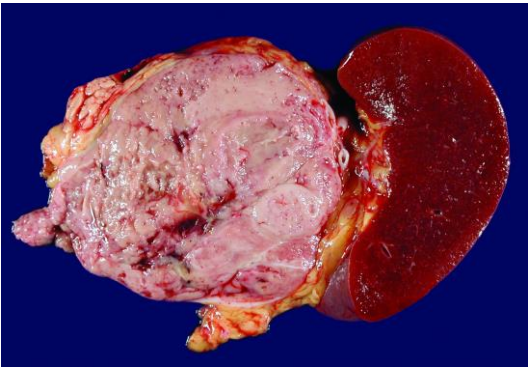


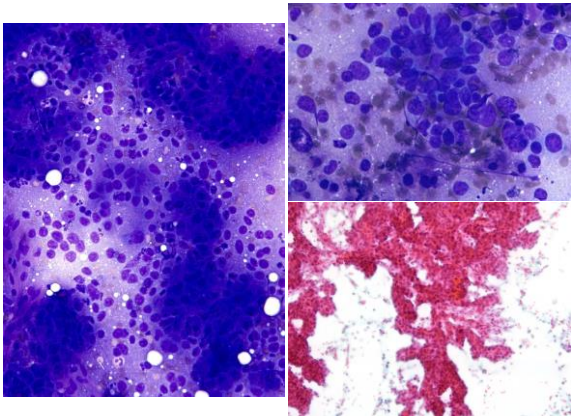
- Extremely bad prognosis
- Rule out metastasis to the pancreas (melanoma)

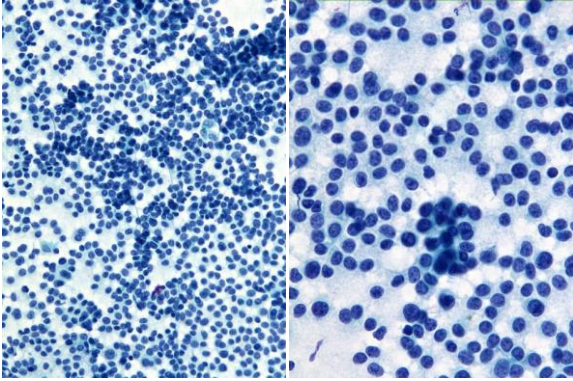
Acinar Cell Carcinoma

- 1-2% of pancreatic neoplasm
- More common in males, mean age-60y (6% in childhood)
- 10% have “hypersecretory syndrome”
- Large bulky tumors (mean size - 10cm), expansile growth, more common in HOP
- Elevated serum AFP (DD-PB)
- 40% of small NE IHC+, Mixed Acinar-NE CA (>25% NE component)
- 50% have mets at dx
- Overall Survival – 56.9mo (between PanNET-Ductal ACA)

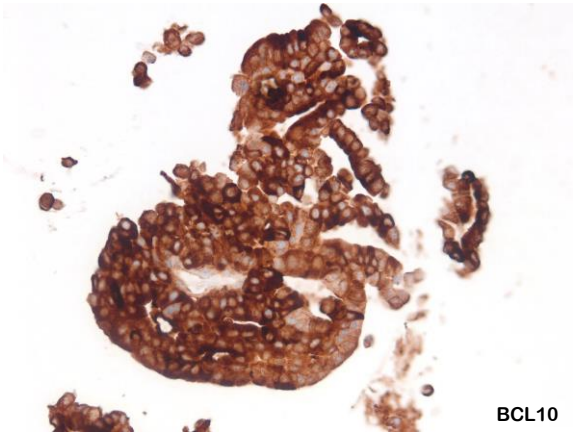








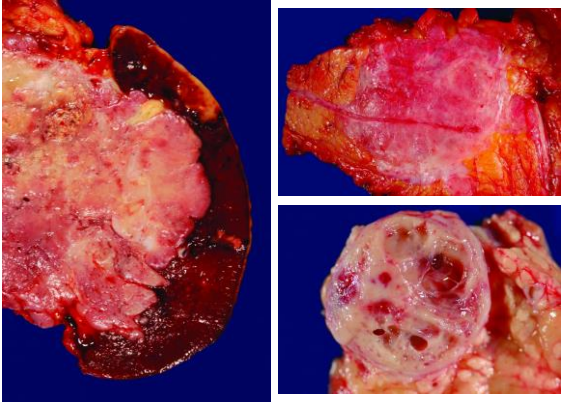
- Trypsin/chymotrypsin (90%), BCL-10 (85%)
- Focal neuroendocrine marker immunorexpression (up to 43%)
- Overall median survival 19-57 (38) months (age, size and stage)

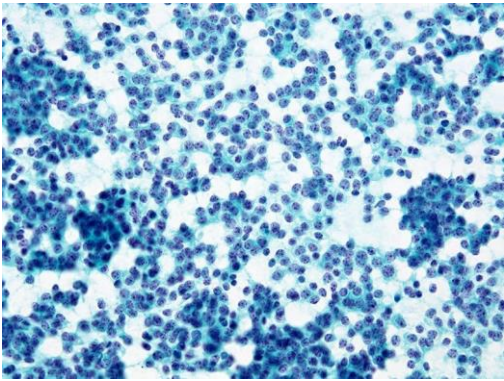


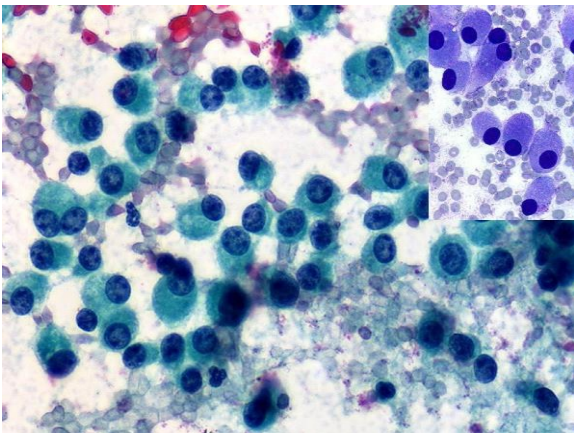
Endocrine Pancreas

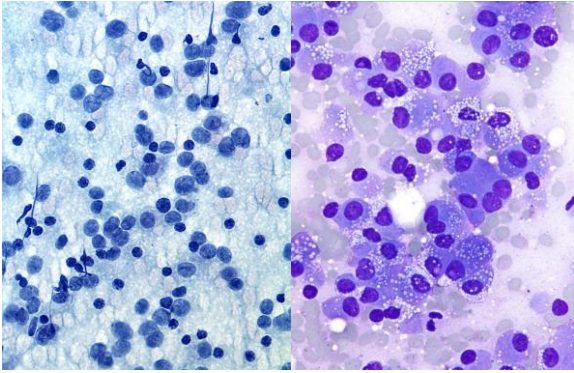
- **Pancreatic Neuroendocrine Tumor (PanNet)**
- **High-grade NE Carcinoma**
 - Small cell type
 - Large cell type

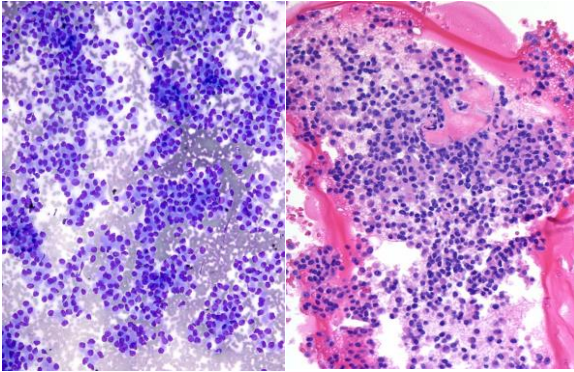




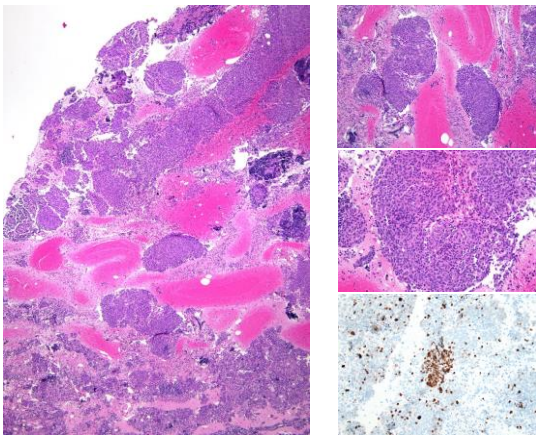


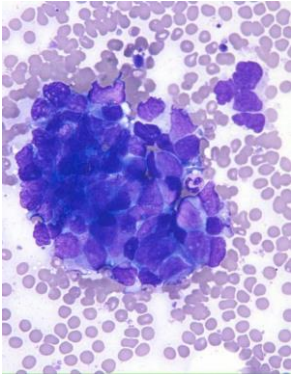






- NE markers (Chromo, Synapto, INSM1)+, CK7 -, PAX 8 +
- Size (>0.5cm are malignant)
- Grading with Ki-67 % (G1 0-2%, G2 3-20%, G3 >20%)





Metastatic Tumors

- Adenocarcinomas
 - Lung, Stomach, Colon, Breast
 - Renal Cell Carcinoma
- Hepatocellular Carcinoma
- Malignant Melanoma
- Sarcomas
 - Leiomyosarcoma
 - MFH
 - MPNST

