Liver and Pancreatic Manifestations of VHL

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Liver and Pancreatic Manifestations of VHL

Background

Pancreatic Lesions in VHL.

- 77% of VHL patients have pancreatic lesions.¹
  - Most simple cysts.
  - 9% Serous cystadenomas (SCA).
  - 9% Pancreatic Neuroendocrine Tumors (PNET).
- Mortality PNET 1.9%.²


Agenda

- Background.
- Pancreatic Cystic Lesions in VHL.
- VHL-associated PNET.
- Treatment options for liver metastasis.
- Summary.

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Background

- Improved survival and quality of life in patients with VHL by better understanding of the biology of VHL-associated pancreatic and liver tumors.
  - Better diagnostics.
  - Better surveillance.
  - Tailored intervention.
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Pancreatic Cystic Lesions in VHL.

NORMAL

CYSTS

Pancreatic Cystic Lesions in VHL.

NORMAL

CYSTS
Pancreatic Cystic Lesions in VHL.

- **Diagnosis.**
  - VHL simple cyst vs. Serous Cystadenoma.
  - Serous cystadenoma vs. IPMN vs. MCN vs. cystic PNET.
- **EUS biopsy.**
  - Molecular testing (VHL mutation).
- **Management.**
  - Observation except if symptomatic.

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**Serous Cystadenoma**

**VHL-associated PNET**

Observe or operate?
VHL-associated PNET
Indications for surveillance

• Rationale
  – 40% no tumor growth or decrease in tumor size over 4 years.¹
  – <20% are malignant (locoregional invasion or metastasis).²
  – Low metastatic potential noted for:³
    • Tumor <3cm.
    • No mutation in exon 3 of VHL.
    • Doubling time of <500 days.

¹. Igarashi et al, J. Gastroenterol, 2014.

VHL-associated PNET
Surveillance strategies

• Annual.¹
  – CT and MRI.
  – PET-CT using Ga-DOTATATE or F-FDG as an adjunct.
• 2-3 years.²
  – CT scan and MRI.


VHL-associated PNET
Indications for surgical management

• Localized disease.
  – PNETs ≥ 3cm in the body or tail.
  – PNETs ≥ 2cm in the head.
  – Tumor doubling < 500 days.
  – Mutation in exon 3 of VHL.
• Locally advanced or metastatic disease.
  – If feasible and if > 90% of the entire tumor burden can be removed.

Enucleation PNET

Body of pancreas
Cauterize vessels on tumor
Clip vessels on pancreas
Shearing out of islet cell tumor
Islet cell tumor

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VHL Alliance, 2017

Tampa, FL

THE WHIPPLE PROCEDURE

BEFORE

AFTER

Robotic technology
Minimal invasive management of PNETs

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PNET Liver Metastasis
PNET Liver Metastasis

Treatment options

- Surgical resection.
- Microwave ablation.
- Selective intra-arterial radiotherapy.
- Chemoembolization or bland embolization.
- Medical therapy.
  - Somatostatin analogues.
  - Targeted therapy (mTOR inhibitors)
  - Chemotherapy.
  - Peptide-receptor radionuclide therapy.

PNET Liver Metastasis

Surgical resection

PNET Liver Metastasis

RFA or MWA

PNET Liver Metastasis

Selective intra arterial radiotherapy
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Summary

- Pancreatic manifestations occur in more than two-thirds of patients with VHL.
- Cystic lesions nearly always benign.
- Natural history of PNET is variable.
- There are better diagnostic tools and many management options.
- Judicious surveillance and tailored interventions ensure optimal outcomes.

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