The role of surgery in the management of neuroendocrine liver metastases (NELM)

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Management of NELM is challenging:

- Lack of prospective data
- No firm consensus
Unique features of NELM

- Protracted course (cancer in slow motion)
- Clinical syndrome
- Tumor markers
  - Diagnosis
  - Symptoms
  - Monitor
- Growth inhibition/symptomatic relief by specific blocking agents
The role of Surgery in the treatment of NELM signifies a paradigm shift.

**CURE**(R0)
- Survival

**PALLIATION**
(Cytoreduction)
- Symptoms
- Survival
Keep in mind:

- Slow growing nature of NELM makes them less responsive to conventional palliative treatment options
- Clinical syndrome directly related to tumor mass
- NET tend to metastasize to liver only (target organ)
Indications for surgery in NELM

- Primary tumor can be controlled
- Limited mets outside the liver
- Reasonable performance status

*MAYO*
Surgery for NELM

- Curative
  - R0 intent
- Palliative
  - Less than R0
Surgery with curative intent (R0)

- Unresected NELM 5yr survival 20-40%
- Resected NELM 5yr survival 46-86%
- Local recurrence at 5yr 40-70%
- 96% recurrence in liver
Surgery with palliative intent

- Goals include:
  - Palliation of symptoms (Q.O.I.)
  - Prolong survival
- **Caveat:** Surgical outcomes must justify operative intervention
- Definition of palliative surgery - remove at least 90% of gross disease!
- 96% symptomatic relief post surgery
- 56% recurrence rate of symptoms at 5 yr
- 83% 3yr survival rate (positive spin-off)
THE ROLE OF LTX

- Theoretical advantages:
  - Remove all tumor burden
  - Remove most common site of recurrence
- Factors that may preclude OLT as an option:
  - Early disease recurrence
  - Significant M M
  - Shortage of donor organs
  - Financial implications
  - Absence of extensive experience
- Post transplant:
  - 5 yr survival 70%
  - 5 yr recurrence free survival 50 %
  - Mazzaferro criteria
Conclusions

- Aggressive surgical approach can lead to:
  - Long-term survival
  - Significant long-term palliation
  - Good Q.O.L.
- Cytoreductive surgery should be pursued whenever possible even if complete resection may not be possible!
Flow diagram

Isolated neuroendocrine liver metastases
(imaging with CT, MRI, and somatostatin scintigraphic scans)

Multidisciplinary meeting and discussion

Completely resectable by surgery alone

Resection with curative intent
(Consider cholecystectomy)

Able to ablate all disease with combination of resection and RFA
(1) < 70% of the liver was involved by tumor
(2) No evidence of unresectable extrahepatic tumour spread

Resection and RFA with curative intent
(Consider cholecystectomy)

Cytoreductive resection +/- RFA for symptom relief/prolong survival
(Consider cholecystectomy)

Able to resect/ablate >= 90% of hepatic disease

Candidate for liver transplant*

Orthoptic liver transplant

Unable to ablate all disease

Not resectable with surgery alone

Unable to resect/ablate >= 90% of hepatic disease

Not candidate for transplant

Palliative chemotherapy/TACE/octreotide

*Milan criteria for suitability of neuroendocrine liver metastases for transplantation

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