INCIDENTAL OR SURPRISE GALLBLADDER CANCER

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DEFINITION

- Gall bladder carcinoma (GBC) found on
  - histopathology
  - after the gall bladder has been removed for
  - symptomatic benign gall bladder diseases
  - gall stones,
  - cholecystitis and
  - GB polyps with or without gallstones
INCIDENCE

- Incidental GBC accounts for
  - 70% of all patients diagnosed with GBCs, whereas
  - 30% of cases are suspected pre-operatively
- The incidence of incidental GBC is 0.2 -3% of all cholecystectomies
- This is due to the wide range of Laparoscopic Cholecystectomy (LC) procedures being carried out for benign GB disease
- However, this expect to be decreasing due to wide spread use of ultrasound scanning for upper abdominal symptoms suggestive of GB disease
- Incidental GBC is 2-3 times more common in women than in men and its frequency increases with age
AETIOLOGY

• The pathogenesis:
  – not clear but is probably related to chronic inflammation
• Various factors have been implicated in the etiology-pathogenesis
  a) Gallstone (75-90%) of cases
  b) Porcelain GB (calcified GB associated with > 20% incidence of GBC
  c) Choledochal cyst + adenomatous GB polyps
  d) Anomalous of pancreato-biliary junction
  e) Primary sclerosing cholangitis
  f) Obesity
  g) *Salmonella typhi* infection
  h) Smoking: increases the risk of developing GBC due to exposure to various carcinogens excreted via bile
PATHOLOGIC FEATURES

- GBC can be categorized into:
  a) infiltrative: commonest
  b) nodular
  c) papillary, or
  d) combined forms
- The infiltrative tumours causes thickening and induration of the GB wall, sometimes extending to involve the entire GB
PATHOLOGIC FEATURES

• Most GBCs are of EPITHELIAL ORIGIN
• Histological subtypes include:
  a) Adenocarcinoma
  b) Squamous
  c) Adenosquamous
  d) Oat cell (less common)
• Adenocarcinomas demonstrate papillary features histopathologically and are commonly diagnosed while localized to the GB and are associated with an improved overall survival
MODE OF SPREAD

GBC spreads by:

a) Lymphatic
b) Haematogenous
c) Intraperitoneal (seeding )
d) Luminal spread via cystic duct (intraductal )
e) Direct anatomic spread involving contiguous organs
   - Spread by lymphatic is the most common and is an important mode of dissemination
   - Spread by venous drainage is via cholecystic venous plexus to a variable number of cholecystic veins
MODE OF SPREAD

• These cholecysto-hepatic veins directly enter into middle hepatic veins
• This venous spread forms the basis of excision of the middle liver segments (4b and 5 or 4,5 and 8 ) as part of radical procedure
• Intraperitoneal spread is common and generally involves the adjacent organs like liver, CBD, colon, doudenum, pancreas, omentum, and stomach
• Intraductal spread along the lumen and the wall of the ducts is rare and is usually seen in papillary type of GBC
STAGING

• The appropriate management and overall prognosis are strongly dependent on tumor staging
• The American joint committee on cancer (AJCC) TNM staging for GBC seventh edition (2010) is used
STAGING
Primary Tumor

• **Tx**: Primary tumor cannot be assessed
• **T0**: No evidence of primary tumor
• **Tis**: Carcinoma in situ
• **T1a**: Tumor invades lamina propria
• **T1b**: Tumor invades muscle layer
• **T2**: Tumor invades perimuscular connective tissue, no extension beyond serosa or into liver
STAGING
Primary Tumor

- **T3**: Tumor perforates the
  - serosa and/or invades
  - structures such as
    - the stomach, duodenum,
    - colon, pancreas,
    - omentum or extra hepatic bile duct
- **T4**: Tumor invades
  - main portal vein or hepatic artery, or
  - two or more extrahepatic organs or structures
STAGING
Regional Lymph Nodes

• Nx: Regional lymph nodes cannot be assessed

• N0: No LN metastasis

• N1: Metastasis to nodes along the
  – cystic duct,
  – CBD,
  – hepatic artery and / or
  – portal vein
STAGING

Distant Metastases

- M0  No distant metastases
- M1  Distant metastases
### Anatomic Stage / Prognostic Groups

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HISTOLOGIC GRADE (G)

- Gx  Grade cannot be assessed
- G1  Well differentiated tumour
- G2  Moderately differentiated tumour
- G3  Poorly differentiated tumor
- G4  Undifferentiated tumour
CLINICAL PRESENTATION

• Usually asymptomatic
• Some patients present with signs and symptoms which are generally indistinguishable from cholecystitis and cholelithiasis e.g. RUQ abdominal pain, abdominal discomfort, nausea and vomiting
• Less common presentations include jaundice, weight loss, anorexia and abdominal mass
• The least presentations are signs of GIT bleeding or obstruction
INVESTIGATIONS

- All the images use for biliary tract investigation are insensitive for incidental GBC.

- Early lesions confined to the GB wall may be missed especially in the presence of G-Stones.
MANAGEMENT

- Incidental GBC is a difficult management issue as there are no established guidelines.
- The appropriate operative procedure for the patient with GBC is determined by the pathologic stage.
- The extent of surgical excision remains controversial.
MANAGEMENT
Stage I: P Tis and P T1

- P Tis and P T1
- The tumour removed through cholecystectomy as is done for benign GB disease
- Open or LC is adequate treatment for Tis and T1
- P T1b: Simple cholecystectomy with LN dissection has been recommended
MANAGEMENT
Stage II and III: PT2 and PT3

• Additional radical surgery is needed to achieve a tumour free surgical margin, along with lymph node dissection
• Radical re-resection may include liver resection, and / or extra hepatic bile duct resection and LN dissection
• This has been the operation of choice for pT2 and pT3 GBCs, and it has shown significant survival benefit
MANAGEMENT
Stage II and III: PT2 and PT3

- A study done in France by Fuks and colleagues validates the concept of re-resection in PT2 and PT3 GBC, but no bile duct resection
- According to Fuks, bile duct resection increases post-operative morbidity but does not improve survival
- Liver resection may take several forms such as hepatic segmentectomy of 4b and 5, or right hepatectomy for tumours involving the right hepatic portal triad
MANAGEMENT
Stage IV:

• PT4
• Rarely diagnosed as incidental GBC
• Presents as metastatic disease
• Presence of distant metastasis is considered irresectable
MANAGEMENT –
Role Of Adjuvant Radical
Radiotherapy

• The alternative to further radical resection and lymph node dissection (RR-RL) is radical radiotherapy to the gallbladder bed and lymphatic drainage area.
• Simple cholecystectomy and adjuvant external radiotherapy (SC-ERT) can be recommended for Stage 1b disease only as an alternative to additional radical surgery for patients not keen to undergo second operation or who are at high risk for general anesthesia and major surgery.
MANAGEMENT – Role Of Adjuvant Radical Radiotherapy

• In stages II and III addition of radical surgery is superior to radiotherapy

• Patients with nodal metastasis beyond the peri-choledochal nodes should not be considered for curative resection
PROGNOSIS AND OUTCOME

- The survival rate with incidental GBC is related to stages
- pT1 disease treated with a cholecystectomy has an excellent prognosis (90 – 100% 5 years survival rate)
PROGNOSIS AND OUTCOME

• For pT2 and pT3 lesions who underwent additional radical surgery to achieve a tumour free surgical margin along with lymph nodes dissection, the
  – 1- years survival rate was 87%,
  – 3- years survival rate was 73%, and
  – 5- years survival rate was 47%
CONCLUSION

• Incidental GBC is becoming more common due to the wide spread use of LC procedures being carried out for benign GB disease
• However, this may be decreasing due to use of ultrasound scanning for upper abdominal symptoms suggestive of GB disease
• Open or L C is adequate treatment for pTis and pT1
• For patients whose cancer is an incidental finding on pathologic review, re-resection is indicated for all stages except Stage Ia (limited to mucosa)
CONCLUSION

• Given the high rate of residual disease, therefore re-resection still the only curative treatment, and should be strongly considered for pT2 and pT3, but no CBD resection

• Although the type of hepatic resection does not appear to affect the outcome, it is essential to achieve tumour-free surgical margins

THANKS
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