

Chapter 4

GALLBLADDER CANCER

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EPIDEMIOLOGY

The incidence of gallbladder cancer (GBC) varies according to countries and geographical locations. It's incidence is higher in East Asian countries and South America, mostly in Chile, besides in particular countries such as Pakistan India¹. However, GBC is the 6th most common tumor in Western countries, it is the most common gastrointestinal malignancy in Southwestern Native Americans and Mexican Americans^{2,3}. GBC incidence is 1 to 2 cases per 100,000 population in the United States but the incidence increases to 7.1 in 100,000 among Native American females with cholelithiasis, and 27.3 in 100,000 among Native Females in Chile^{4,5,3}. It is six times more common in women⁶. GBC incidence increases with age, and while it peaks in the 7th decade, there are studies suggesting that the incidence is increasing in young Americans^{3,7}.

ETIOLOGY & PATHOGENESIS

Although the pathogenesis of GBC has not been fully clarified, it is thought that gallstones, gallbladder infection, genetics, race, environmental factors, and socioeconomic level play a role in the occurrence of gallbladder cancer^{1,3,8}. The common feature of many etiological factors is that they cause chronic inflammation in the gallbladder³.

Gallbladder Polyps

Gallbladder polyps which are usually found at the gallbladder mucosa, in the pathological examination of cholecystectomy material or incidentally at abdominal imaging, originate from the gallbladder mucosa. Polyps may be benign or malign.

- **Malign Polyps:** Adenocarcinoma, Mucinous cystadenomas, Squamous cell carcinoma, Adenoacanthomas

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Table 2: The 8th edition of The American Joint Committee on Cancer (AJCC) Staging classification of gallbladder cancer

Stage	Tumor	Node	Metastasis
0	Tis	N0	M0
1	T1	N0	M0
2a	T2a	N0	M0
2b	T2b	N0	M0
3a	T3	N0	M0
3b	T1-3	N1	M0
4a	T4	N0-1	M0
4b	Any T Any T	N2 Any N	M0 M1

Treatment

Curative treatment of GBC is particularly surgery. Extensive involvement of hepatoduodenal ligament or major vessels (Common hepatic artery, main portal vein) by the tumor, liver metastasis, extensive peritoneal metastasis, ascites, and paracaval, superior mesenteric artery, celiac artery lymph nodes metastasis are contraindications to resection³⁸. Cholecystectomy would be adequate for T1a tumors³⁹. For T1b, T2 tumors extended cholecystectomy, which is the removal of gallbladder and subsequently resection of adjacent at least 2 cm liver tissue adjacent to gallbladder bed (Segment IVb-V) should be performed⁴⁰. For T3 GBC, en bloc resection of gallbladder and adherent organs is an option but is not associated with improved survival⁴¹. T4 tumors are usually unresectable due to major vessel involvement. Radical resection of locoregional Lymph node (common bile duct, cystic duct, portal vein, or hepatic artery) metastasis is associated with improved five-year survival rates^{42,43}. However, existing lymph node metastasis beyond the locoregional lymph nodes is associated with poor survival rates⁴².

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