The mean duration of surgery was 87.75 min in group A and 116.65 min in group B (p<0.001). The mean duration of pain requiring analgesia was 3.35 days and 5.3 days, respectively (p<0.001). Postoperative ileus was prolonged in group B (p<0.001). None of the patients in group A and four patients in group B had fever. In three of these four patients fever was due to T-tube-related complications. None of the patients in group A and 4 patients in group B had wound infection.

In seven patients (35%) of group B organisms grew in the bile despite the fact that their intra-operative bile culture was sterile. In two patients (10%) of group B peritubal bile leakage occurred. One of these developed rapidly spreading necrotizing fasciitis of the abdominal wall and septicemic shock leading to death. The other patient had biliary peritonitis following T-tube removal. The T-tube tract was used to put another drain in the peritoneal cavity for biliary drainage. The patient responded to conservative treatment and bile leak ceased spontaneous on the 19th postoperative day.

The mean hospital stay was 4.4 days and 15.4 day in groups A and group B, respectively (p<0.0001).

At one month, 3 months and 6 months follow up, neither the symptoms nor the ultrasonography were suggestive of retained stones or biliary stricture in any patient. The overall incidence of morbidity was 5% and 40% while overall mortality was 0% and 5% in groups A and B, respectively.

The recommendation for T-tube drainage is based on three arguments: (i) postoperative decompression of CBD should outflow obstruction occur, (ii) ease of postoperative X-ray visualization of the CBD, and (iii) potential for T-tube extraction of retained CBD stones. However the routine application of cholangioscopy or completion cholangiography plus the availability of ERCP for stone extraction have reduced the importance of these indications for T-tube drainage. Moreover, the use of T-tube is associated with numerous complications. When we compare the postoperative morbidity of T-tube drainage with primary closure of CBD in terms of pain, fever, chest infection, wound infection and hospital stay, we find the latter to be the procedure of choice.

T-tube drainage following choledochotomy is associated with increased bile infection and wound infection. Significant bile leak following T-tube removal is said to occur in 1.2%-30 % of cases. External loss of bile through the T-tube may lead to slow wound healing, anorexia and constipation (post choledochostomy acidotic syndrome). Reinhoff proposed that the incidence of recurring stones would be greater in choledochotomy followed by T-tube drainage. The T-tube acts as a foreign body around which bile pigments and bile salts may precipitate.

In conclusion, the use of T-tube following routine choledochotomy is unnecessary and increases postoperative morbidity and mortality. Primary closure of CBD is more safe and physiological and the procedure of choice following routine choledochotomy.

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Radiation therapy in carcinoma esophagus – a ten-year experience

In developing countries patients with carcinoma esophagus usually present with advanced disease. A combination of external and intraluminal radiation therapy is useful to palliate these patients. We report the findings of a retrospective study done on patients with carcinoma esophagus who were treated with external radiation therapy followed by intraluminal brachytherapy.

Between 1989 and 1999, 123 patients with carcinoma esophagus received external radiation therapy followed by intraluminal radiation as a planned procedure. The external RT dose was 40–45 Gy over four weeks by conventional fractionation, delivered with a cobalt teletherapy unit. Intraluminal radiation was given by Selectron (Nucletron, Netherlands) LDR radiation unit. The dose was 10–15 Gy at 1 cm from the catheter in one fraction.

Patients included in the study were those with biopsy-proven carcinoma who were unwilling or unfit for surgery. Those with metastases were also included. Of the 123 patients studied (64 men), 26 (21.1%) had disease in the upper third, 67 (54.5%) in the middle...
third, and 30 in the lower third (24.4%). All patients had squamous cell carcinoma. Thirteen patients had metastases at presentation.

Nine patients did not follow up after completion of treatment. Three patients did not tolerate the Selectron applicator and pulled out the applicator before completion of treatment. Seventy-eight of 114 (68.4%) patients had relief of dysphagia at 6 weeks; 18 (15.8%) patients continued to have dysphagia following treatment. Twenty patients (17.5%) developed a stricture requiring dilatation. Six patients developed a tracheo-esophageal fistula, of which two were a complication of dilatation of post-radiation stricture and four were due to disease. Survival analysis was hindered by poor follow up. Sixteen of 114 (14.0%) patients were alive at the end of the first year; two patients (1.8%) were alive at the end of ten years.

Caspers et al1 studied 35 patients with carcinoma esophagus treated with external beam radiation therapy and and low-dose-rate intraluminal brachytherapy. They reported dysphagia relief in almost 90% at six weeks; in our patients it was 68.4%. Vivekanandan et al2 reported post-radiation stricture in 59% in their study of 58 patients. In our series 17.5% of patients developed a stricture requiring dilatation. Despite advances in its treatment, radiation continues to be an important means of palliating patients with carcinoma esophagus.

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References


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Pre-vaccination screening for hepatitis B infection in high-risk population: is HBsAg alone adequate?

Conventionally, testing of HBsAg alone is done for pre-vaccination screening against hepatitis B virus (HBV). However, some patients with chronic hepatitis B in the non replicative stage become HBsAg negative with time; the annual rate of delayed clearance of HBsAg has been estimated to be 0.5%-2%.1 Similarly, HBsAg is not detectable in patients with “occult” HBV infection (defined as detection of HBV DNA and/or anti HBc with or without anti HBs). Occult HBV infection has been reported from India as well as other countries.2,3

We conducted a study to estimate the prevalence of HBV infection in high-risk groups. The 103 subjects studied were inmates of a home for mentally challenged children (n=27), inmates of a home for juvenile delinquents (46), and medical personnel (30). Detailed information regarding high-risk behavior including intravenous drug abuse, needle prick, sexual exposure and transfusion was gathered. All subjects were examined to exclude liver disease. Subjects with previous history of hepatitis B vaccination were excluded. Serum specimens were stored at -20°C in multiple aliquots. All sera were tested by enzyme immuno assay (EIA) for HBsAg, antibodies to hepatitis B core antigen (anti HBc) and antibodies to HBsAg (anti HBs) (Dia sorin, saluggia [UC], Italy).

Overall, 7 subjects (6.7%) were HBsAg positive, 14 (13.7%) were anti HBc positive, and 25 (24.37%) were anti HBs positive (Table). Of 7 subjects who were HBsAg positive, 5 (4.9%) had both HBsAg and anti HBc positivity. The number of subjects diagnosed to have HBV infection by HBsAg alone was 7 (6.7%), by HBsAg+anti HBc was 16 (15.5%), by HBsAg+anti HBs was 32 (31.1%), and by a combination of all three tests was 41 (39.8%).

Table: Distribution of HBV markers in high-risk group

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Mentally challenged children (n=27)</th>
<th>Inmates of juvenile home (n=46)</th>
<th>Medical personnel (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (y)</td>
<td>17.3 (0.9)</td>
<td>14.3 (3.3)</td>
<td>36.3 (10.4)</td>
</tr>
<tr>
<td>Male: female</td>
<td>12 : 15</td>
<td>46 : 0</td>
<td>22 : 8</td>
</tr>
<tr>
<td>HBsAg positive, anti HBc negative, anti HBs negative</td>
<td>0 (0%)</td>
<td>2 (4.3%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>HBsAg negative, anti HBc positive, anti HBs negative</td>
<td>5 (18.5%)</td>
<td>1 (2.2%)</td>
<td>3 (10%)</td>
</tr>
<tr>
<td>HBsAg positive, anti HBc positive, anti HBs positive</td>
<td>1 (3.7%)</td>
<td>3 (6.5%)</td>
<td>1 (3.3%)</td>
</tr>
<tr>
<td>HBsAg negative, anti HBc negative, anti HBs positive</td>
<td>1 (3.7%)</td>
<td>11 (23.9%)</td>
<td>13 (43.3%)</td>
</tr>
<tr>
<td>All negative</td>
<td>20 (74.1%)</td>
<td>29 (63.0%)</td>
<td>13 (43.3%)</td>
</tr>
</tbody>
</table>

The actual prevalence of HBV infection was 39.8% (41/103) in this cohort, compared to the prevalence of HBsAg alone, which was 6.7% (7/103). Thus HBV infection would have been missed in a large number of subjects, leading to unnecessary vaccination. Testing for all three markers increases the overall cost of a vaccination program; cost-effective test methods are therefore required.

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