Abstract:

Objectives: 1) To compare post operative abdominal complications like wound infection, biliary peritonitis, subhepatic collection/abscess associated with open cholecystectomy with and without drain.  
2) To compare post operative pain and hospital stay in open cholecystectomy with and without drain.  

Materials and Methods: Patients admitted to Chigateri general hospital and Bapuji hospital attached to J.J.M.medical college, Davangere with primary diagnosis of chronic calculous cholecystitis and who undergo elective open cholecystectomy were taken for this prospective study over a period of 2 years.  

Results: Patients in drain group had more post operative pain, subhepatic collection and longer hospital stay. There was no difference noted in post operative wound infection and chronic abdominal pain.  

Conclusion: Drainage in cholecystectomy is associated with more complications than those without drain. Therefore drains increase harm to the patient without providing any additional benefits for the patients undergoing uncomplicated elective open cholecystectomy.  

Key Words: Cholecystectomy, cholelithiasis, drain.
study and patients diagnosed with acalculous cholecystitis, acute cholecystitis, gallbladder carcinoma, gallbladder polyps, calculus cholecystitis associated with complications, like empyema, obstructive jaundice were excluded.

Evaluation of the observations was done using chi square test and student unpaired t test.

**Results**

The study included 60 patients of chronic calculous cholecystitis undergoing elective open cholecystectomy. Of them, 30 patients had a tube drain kept in the sub hepatic space and remaining 30 patients were without a drain. The most commonly affected age group was 41-50yrs with 21 cases(35%) followed by 31-40yrs with 13cases(21.7%). The youngest patient was 18yrs and oldest 92yrs. 32 patients were female and 28 were male. The present study showed female preponderance of gall stone disease. Post operative pain was evaluated by Visual Analogue Scale(VAS) and was graded from grade 0 to grade 5. In the drain group 27 patients 16 had grade 3 and 11 grade 4 pain. In the group without drain 7 had grade 1 and 15 had grade 2 pain and only 7 had grade 3 pain. (Table 1)

<table>
<thead>
<tr>
<th>Pain</th>
<th>With Drain</th>
<th>Without Drain</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>G0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>G1</td>
<td>3</td>
<td>10.0</td>
<td>7</td>
</tr>
<tr>
<td>G2</td>
<td>16</td>
<td>53.3</td>
<td>7</td>
</tr>
<tr>
<td>G3</td>
<td>11</td>
<td>36.7</td>
<td>1</td>
</tr>
<tr>
<td>G5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1. POST OPERATIVE PAIN

X²=26.8  P<0.001HS

Table 2. POST OPERATIVE WOUND INFECTION

<table>
<thead>
<tr>
<th>WI</th>
<th>With Drain</th>
<th>Without Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent (-)</td>
<td>28(93)</td>
<td>29(97)</td>
</tr>
<tr>
<td>Present (+)</td>
<td>2(7)</td>
<td>1(3)</td>
</tr>
</tbody>
</table>

In the present study wound infection was noted in 2(7%) patients in the drain group and 1(3%) patients without drain group. This was not statistically significant. (Table 2)

There was no biliary peritonitis observed in our study.

Mean hospital stay was 4days in patients without drain and was 6days in drain group.

**Discussion**

Since the first successful elective cholecystectomy in 1888 by Langenbeck, the issue of the use of routine drainage is still unresolved, needing a clear answer. Spivak et al in 1913 reported first cholecystectomy without drainage. In 1915 Yachet et al described that there is no need to drain the peritoneal cavity and nothing extra is to be gained by leaving drains in the fossa after cholecystectomy. Any leakage of blood and bile from the gall bladder bed is effectively absorbed by the peritoneum. The holes of the drain get plugged with fibrinous exudates and clotted blood. The practice of using drain after cholecystectomy is based on tradition rather than any scientific fact. It is associated with increased morbidity, slow convalescence, significant post operative nausea and pain and delay in return to the job. The present study also revealed that putting a drain after cholecystectomy is associated with increased morbidity.

The other logic for drainage of sub-hepatic space after cholecystectomy is fear of bile leakage from the gall-bladder bed that may lead to bile peritonitis. However, many cases have been reported where indwelling drains failed to drain the bile or pericholecystic abscess. Therefore the lack of bile leakage from a drain cannot be interpreted as the absence of bile leakage. According to Frederich Coller “Bile is not educated to climb up the drains”. Drains become surrounded by omentum or blocked by some clot or exudates soon after the insertion into the peritoneal cavity and thereby isolated.

Table 3. POST OPERATIVE SUB HEPATIC COLLECTION

<table>
<thead>
<tr>
<th>subhepatic collection in ml</th>
<th>With Drain</th>
<th>Without Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd POD</td>
<td>36.66667</td>
<td>15.3</td>
</tr>
<tr>
<td>7th POD</td>
<td>22.66667</td>
<td>11.3</td>
</tr>
</tbody>
</table>

* Student's unpaired t test

The sub hepatic collection was assessed by USG on 3rd and 7th post operative days. Mean sub hepatic collection noted in patients with drain on 3rd day was 36.6+/-15.3 ml and on 7th day was 22.6+/-11.3ml. Mean sub hepatic collection in patients without drain on 3rd day was 25+/-9.5ml and 7th day was 12.16+/-8.7ml. There was significant difference noted between the two groups. (Table 3)
Ultrasonography performed after cholecystectomy on the discharge-day of the patient revealed no significant subhepatic collection in either group\(^1\). This is also noticed by other workers\(^1\)\. Cholecystectomy without drainage carries short hospital stay \(^1\). Our study also supports the view.

**Conclusion**

The incidence of cholelithiasis is highest in 5\(^{th}\) decade and is more common in females. Patients in drain group have significantly more post operative pain and subhepatic collection. There is no difference noted in post operative wound infection and chronic abdominal pain. Therefore drains increase harm to the patient without providing any additional benefits. We suggest that all open cholecystectomies should be completed without drainage of gall bladder fossa.

**References**:


How to Cite this article:

Deepak G U, Santosh R P, Raghuveer K  Comparative study of Open Cholecystectomy with and without Drain


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