COMPARATIVE STUDY OF CATHETER DRAINAGE AND NEEDLE ASPIRATION IN THE MANAGEMENT OF LIVER ABSCESS

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ABSTRACT

BACKGROUND
The incidence of liver abscess both pyogenic and amoebic is steadily increasing. Liver abscess is potentially curable condition and without treatment the mortality is very high. The objectives of this study were- 1. to compare and correlate the therapeutic effectiveness of percutaneous needle aspiration and percutaneous catheter drainage in the treatment of liver abscess, and 2. to indicate the various determinants that affect the success of both the procedures.

MATERIALS AND METHODS
A non-randomized controlled trial was conducted between January 2017 and June 2018 among 60 cases admitted in Basaveshwara Teaching and General Hospital Gulbarga. Source of data is from a pretested proforma from the inpatient registry. Out of 60 patients studied, 30 (50%) patients were treated with percutaneous needle aspiration with 18G spinal needle. 30 (50%) patients were treated with percutaneous catheter drainage using 12F pigtail catheter. Sample size was taken for convenience.

RESULTS
Percutaneous needle aspiration was successful in n=19 (63.33%), with all the failures treated successfully by percutaneous catheter drainage. Percutaneous catheter drainage was successful in all n=26 (86.67%). There was a statistically significant difference in terms of success rate in catheter drainage group (p<0.001). There is a significant difference (p<0.001) in time required for 50% decrease in the size of abscess cavity, with less time required in PCD group, although hospital stay and duration of antibiotics are more in catheter group, there is no statistically significant difference between the groups (p>0.05). Two patients had complications noted in PCD group, while none reported in PNA group.

CONCLUSION
PCD is better modality as compared to PNA in terms of overall success rate, especially in larger abscesses. PNA is the cheaper method with its use limited to smaller abscesses, there is no statistically significant difference in terms of complications associated with PCD and PNA, So we conclude here that PCD as first line treatment option but consider PNA as an alternative in smaller abscesses.

KEY WORDS
Liver Abscess, Percutaneous Needle Aspiration, Percutaneous Catheter Drainage.


BACKGROUND
Liver abscess both amoebic and pyogenic continues to be an important cause of morbidity and mortality globally. The mainstay of treatment of liver abscess in the recent past has been either a percutaneous catheter drainage or percutaneous needle aspiration. Various studies done in the recent past have not given a concrete conclusion as to which of the two is better in the treatment of liver abscess. Hence the purpose of this study is to compare the above-mentioned treatment modalities and to identify the better option for treating patients suffering from liver abscess in our setup1.

Although needle aspiration of liver abscess is easier, less costly the important reason for failure of needle aspiration is its inability to completely evacuate the pus.

Aims and Objectives
1. To compare and correlate the therapeutic effectiveness of percutaneous needle aspiration and percutaneous catheter drainage in the treatment of liver abscess.
2. To identify and compare the morbidity and side effects associated with both procedures.

MATERIALS AND METHODS
A Non-Randomized controlled trial was conducted between January 2017 to June 2018 over 60 cases, admitted in Basaveshwara Teaching and General Hospital Gulbarga. Source of data is from a pretested proforma from the inpatient registry. Out of 60 patients studied 30 (50%) patients were treated with percutaneous needle aspiration.
Inference- There is statistically significant difference between the groups for treatment with more among PCD group.

Table 6. Comparison of Success Among PNA and PCD Groups

<table>
<thead>
<tr>
<th></th>
<th>PNA</th>
<th>PCD</th>
<th>Total</th>
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<tbody>
<tr>
<td>Success</td>
<td>Yes</td>
<td>19 (63.33)</td>
<td>26 (86.67)</td>
</tr>
<tr>
<td>No</td>
<td>11 (36.67)</td>
<td>04 (13.33)</td>
<td>22 (36.67)</td>
</tr>
<tr>
<td>Total</td>
<td>30 (100)</td>
<td>30 (100)</td>
<td>60 (100)</td>
</tr>
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P=0.001

Inference- There is statistically significant difference between the groups for success of treatment with more among PCD group.
DISCUSSION

Age wise distribution: In this study, the maximum number of cases was in 41-50 years age group (26.67%). The youngest patient we recorded was 16 years old and oldest was 75 years. The mean age was 46 years.

Success Rate

In this study, PCD has higher success rates (63.33%) compared to PNA (36.67%). The first non-randomized trial conducted by Rajak and colleagues in 1998 showed 100% resolution of PLAs in the PCD group with a 60% success rate in the PNA group. According to (Zerem & Hadzic, 2007), PCD is successful in all 30 patients undergoing one or two PCD’s. In the PNA group, a 33% failure rate was reported after three aspiration procedures. According to S Sing et al, PCD is successful in 100%, while PNA in 77% of cases. Yu and colleagues in 2004 found no significant differences found PCD and PNA, suggesting that PNA may be as effective as catheter drainage.

Clinical Improvement in Days

In this study, the mean time for clinical improvement is 3.63 days in PCD group while it is 4.07 in PNA group. There is no statistically significant difference between the two groups. Our findings are consistent with S Sing et al.

Time for 50% Decrease in The Size of Abscess Cavity in Days

In this study, the mean time for 50% decrease in size of abscess cavity is 3.93 in PCD group while it is 5.50 in PNA group. There is a statistically significant difference between the two groups. Our findings are consistent with S Sing et al.

Hospital stay in days: In this study, the mean time of hospital stay is 11.33 in PCD group while it is 10.70 in PNA group. There is no statistically significant difference between the two groups. Our findings are consistent with S Sing et al.

O’Farrell et al. According to Yu and colleagues in 2004, there was a tendency to a shorter hospitalization and lower mortality rate found in the PNA group.

Duration of iv antibiotics in days in this study, the mean duration of iv antibiotics is 9.67 in PCD group while it is 8.80 in PNA group. There is no statistically significant difference between the two groups. Our findings are consistent with S Sing et al.

Complications

In this study, no complications were met with PNA group while 2 patients in the PCD group has complications related to catheter placement. There is no statistically significant difference between the two groups. Baek et al. and Giorgio et al. described the much lower incidence of complications with PNA than with PCD. However, in our study and some recent studies (Rajaket al 1998,3 Yu et al 2004,9) both the procedures were found to be safe if performed properly with minimal complications. There was no mortality in either of the study groups.

CONCLUSION

Percutaneous catheter drainage is a better modality as compared to percutaneous needle aspiration in terms of overall success rate, especially in larger abscesses. Percutaneous needle aspiration is a cheaper method with its use limited to smaller abscesses. There is no statistically significant difference in terms of complications associated with PCD and PNA of liver abscess. We the authors conclude PCD as first-line treatment option but consider PNA as an alternative in small abscesses.

REFERENCES


