Section: Pain and Palliative Medicine

Case Series

TUNNELED VERSUS NON-TUNNELED INDWELLING PERITONEAL CATHETERS FOR REFRACTORY MALIGNANT ASCITES IN ADVANCED GALL BLADDER CARCINOMA: A CASE SERIES

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ABSTRACT

Background: Malignant ascites is a prevalent and distressing complication in advanced gallbladder carcinoma, significantly affecting quality of life.[1,11] Refractory ascites frequently requires multiple large-volume paracentesis, resulting in recurrent hospital visits and procedural strain.[4,13] Indwelling peritoneal catheters provide an efficient palliative option for prolonged drainage.[5-9] This case series evaluates tunneled versus non-tunneled indwelling peritoneal catheters in the treatment of refractory malignant ascites.

Materials and Methods: This retrospective case series comprised patients with advanced gallbladder carcinoma and refractory malignant ascites treated with indwelling peritoneal catheters in a palliative care context. Patients received either straight (non-tunneled) catheter insertion or tunneled catheter insertion. The evaluated outcomes comprised symptom alleviation, peri-catheter leakage, local complications, dressing change frequency, and patient comfort.

Results: Both tunneled and non-tunneled catheters effectively alleviated symptoms of abdominal distention and dyspnea. Nevertheless, the tunneled catheter cohort exhibited a lower incidence of complications, specifically diminished peri-catheter leakage and skin maceration. Patients with tunneled catheters require fewer dressing changes and indicate enhanced overall comfort relative to the non-tunneled cohort.

Conclusion: Tunneled indwelling peritoneal catheters seem to be a safer and more efficacious choice for the long-term management of refractory malignant ascites in advanced gallbladder carcinoma. The tunneled method demonstrated reduced leakage rates and enhanced patient comfort, rendering it advantageous in palliative care environments.

Categories: Palliative Care, Oncology, Pain Management, Gastroenterology

Keywords: Malignant ascites; gall bladder carcinoma; tunneled catheter; palliative care; indwelling peritoneal catheter; refractory ascites.

INTRODUCTION

Gallbladder carcinoma is an aggressive neoplasm frequently identified at an advanced stage. Malignant ascites is commonly observed in advanced disease and significantly exacerbates symptom burden and decreases quality of life. Patients frequently exhibit abdominal distension, dyspnea, anorexia, fatigue, and diminished functional capacity.[1-5]

Repeated therapeutic paracentesis continues to be the standard management approach; however, it frequently requires numerous hospital visits and multiple invasive procedures. Indwelling peritoneal catheters have become an effective palliative measure, facilitating intermittent home drainage, enhancing symptom management, and decreasing hospitalization rates.[5-13]

Two frequently utilized techniques are straight (non-tunneled) catheter insertion and tunneled catheter

insertion. The tunneled technique theoretically diminishes infection and leakage by establishing a subcutaneous pathway before accessing the peritoneal cavity.[3,7,9] Nevertheless, comparative data concerning these techniques in patients with gallbladder carcinoma remain scarce.

This case series evaluates the clinical outcomes, complication rates, and patient comfort linked to tunneled versus non-tunneled indwelling peritoneal catheters in refractory malignant ascites resulting from advanced gallbladder carcinoma.

MATERIALS AND METHODS

Research Methodology: This was a retrospective observational case series performed in the Department of Palliative Medicine at a tertiary cancer care facility.

Criteria for Patient Selection: The study included patients with advanced gallbladder carcinoma and refractory malignant ascites who underwent indwelling peritoneal catheter placement for palliative care.

Refractory ascites is defined as:

- persistent symptomatic ascites despite pharmacological intervention, or
- swift reaccumulation necessitating multiple paracenteses.[1,4]

Procedure Technique

Placement of Non-Tunneled (Straight) Catheter: A percutaneous catheter was inserted directly into the peritoneal cavity under sterile conditions.

Insertion of a Tunneled Catheter: A subcutaneous tunnel was established before accessing the peritoneal cavity, followed by catheter insertion under aseptic conditions as outlined in prior interventional studies.[6-10]

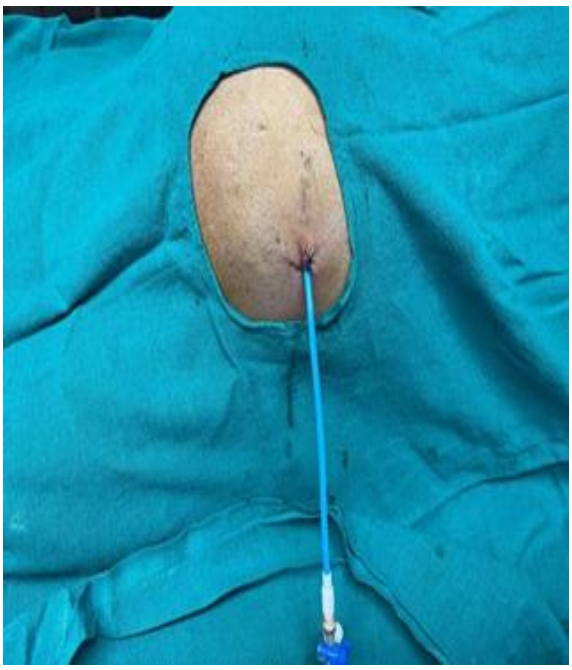


Figure 1: Indwelling pigtail catheter by non-tunneled approach



Figure 2: Indwelling Pigtail catheter by subcutaneous tunneled method

Outcome Measures

The subsequent outcomes were evaluated:

- Alleviation of symptoms
- Peri-catheter extravasation
- Dermatological complications (maceration/infection)
- Interval of dressing alterations
- Comfort of the patient and caregiver
- Requirement for catheter-associated interventions

Ethical Considerations: Institutional ethical standards were maintained. Patient confidentiality was preserved throughout the study.

RESULTS

Both tunnelled and non-tunnelled catheter placement methods yielded substantial symptomatic alleviation of refractory ascites.

Nonetheless, disparities were noted in complication profiles and maintenance necessities. Patient in non-tunnelled catheter cohort encountered:

- Augmented Peri-catheter leakage,
- Regular dressing needs
- Epidermal maceration surrounding the catheter insertion site
- Increases caregiver burden

Conversely, patients treated with a tunnelled catheter exhibited:

- Negligible peri-catheter leakage
- Enhanced skin integrity
- Reduce the frequency of dressing changes
- Enhance overall tolerance and comfort

No significant complications related to the procedure were noted in either group.

DISCUSSION

Malignant ascites in advanced gallbladder carcinoma poses a significant challenge in palliative oncology.[1,11] The principal aim of management is to alleviate symptoms while reducing hospital visits and procedural discomfort.[4,13]

Indwelling peritoneal catheter offers an effective home-based drainage solution and improves quality of life for patients with poor prognosis.[5,6,9] Our observation indicates that although both tunnelled and non-tunnelled techniques effectively alleviate symptoms, tunnelled catheter yield superior overall outcomes.

The rare occurrence of peri-catheter leakage noted with tunnelled catheters may be attributed to the subcutaneous tract functioning as a mechanical barrier.[3,7,8] Less leakage subsequently leads to less skin maceration and localised irritation, enhancing patient comfort and reducing caregiver burden.

The non-tunnelled method, while technically less complex and more expedient, was linked to increased maintenance demands and localized complications. Comparable results have been reported in prior studies assessing a tunnelled drainage system for malignant ascites.[6,10].

These findings are especially pertinent in a palliative care environment, where patient comfort and minimized intervention burden are primary objectives. Our findings endorse the preferential utilization of tunnelled indwelling catheter for the long-term management of refractory malignant ascites in advanced gallbladder carcinoma.

Limitation:

This study's limitations encompass:

- Retrospective Methodology
- Limited sample size
- Absence of a standardized quality of life evaluation tool
- Lack if statistical comparison
- Additional prospective studies with larger cohorts are necessary to confirm the findings

CONCLUSION

Tunnelled and non-tunnelled indwelling peritoneal catheters both effectively alleviate symptoms related to refractory malignant ascites in advanced carcinoma of the gall bladder. Tunnelled catheters were linked to a decrease in local complications, less per-catheter leakage, and enhanced patient comfort. The tunnelled technique may be deemed superior for long-term palliative care.

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