Surgical drain repurposed as an indwelling pleural catheter

Ref No P179

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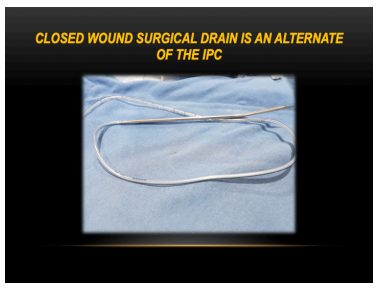
Aim

A proof of concept to demonstrate the closed wound surgical drain can be used as an alternative to indwelling pleural catheter for management of recurrent pleural effusions in resource constrained setting



Background

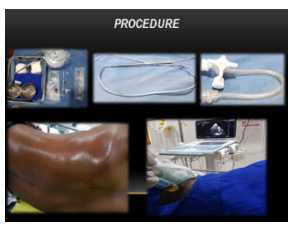
Despite the obvious advantages, the prohibitive cost of IPC's and availability has limited their widespread adoption in developing countries. A closed wound surgical drain is economical and widely available and can be tunnelled subcutaneously like the IPC's to achieve comparable outcomes.

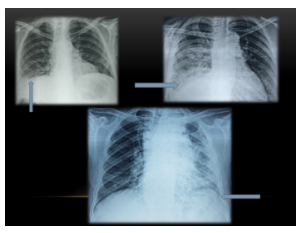
Methods

IPC's insertions are considered standard of care in management of recurrent pleural effusions. This is largely because they are reported in literature to reduce incidence of pleural infections and can be self-managed by the patient. Small bore (size 14 and16F) surgical drains were prospectively inserted in patients who presented with recurrent pleural effusions. The closed wound surgical drain was tunnelled subcutaneously like IPC's and patients were taught to self-manage the same

Procedure technique

Technique is similar like conventional IPC. Under strict aseptic precautions, Lignocaine local anaesthesia and ultrasound guidance, 0.5 cm incision for the entry port. Subcutaneous tissue and intercostal muscles dissected and pleural puncture done with curved artery forceps. Later catheter inserted in to the pleural cavity with the help of artery forceps. Followed by the catheter tunnelled subcutaneously like IPC's with the provided trocar. A three way IV cannula is attached to the catheter to serve the purpose of one way safety valve of conventional IPC.





Results

52 patients with recurrent pleural effusions of varying aetiologies were prospectively included into the study. 34 had Malignant Pleural Effusion, 14 with hepatic hydrothorax, 3 had chronic tubercular pleural effusions and one had Chylothorax. The mean duration of the catheter in situ was for 46 days (8 to 281 days). Auto-pleurodesis was achieved in 28 patients and the catheter was removed. Mild Pain was the most common complication reported in 41 patients . In 11 subjects the tube was clogged with debris, however in only 2 patients this warranted reinsertion of new drain. Catheter site infection rate was 3.8% comparable to that seen in IPC's. Most importantly the cost of the IPC is approximately thirty five times higher than the surgical drain (Cost of IPC is approximately 450 USD whereas Surgical drain costs 15 USD). We also compared the safety and efficacy of surgical drain with our own experience of conventional IPCs and proven that surgical drain is as effective as conventional IPCs.

	Conventional IPC	Surgical drain
Total number of patients	12	52
Median length of stay	52	48
Symptom relief	100%	99%
Pleurodesis achieved	52%	54%
Local site infection	8.3% (n=1)	3.18% (n=2)
Empyema	nil	nil
Catheter clogging	16.6% (n=2)	21% (n=11)

Conclusion

The closed wound surgical drain is economical, effective and well tolerated and can be used in lieu of IPCs in resource constrained settings.

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