



# Secondary failure following epidural catheter insertion after major surgery and trauma- a descriptive survey

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## Background

Epidural analgesia for acute post-operative pain management after major surgery is successful in approximately 70% of cases. <sup>(1)</sup>

Epidural failure can be divided into *primary* (failure at insertion) & *secondary* (failure post insertion).

The reasons for the secondary failure in our hospital had not been systematically reviewed.

## Aim

A descriptive survey examining secondary failure following epidural catheter insertion in adult non-obstetric patients following major surgery and trauma.

## Methodology

### Design:

- Registered project with Trust Clinical Effectiveness Unit
- Prospective data collection

### Inclusion criteria:

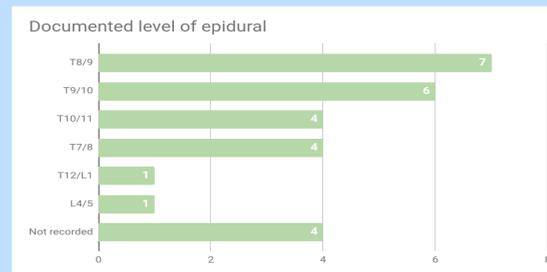
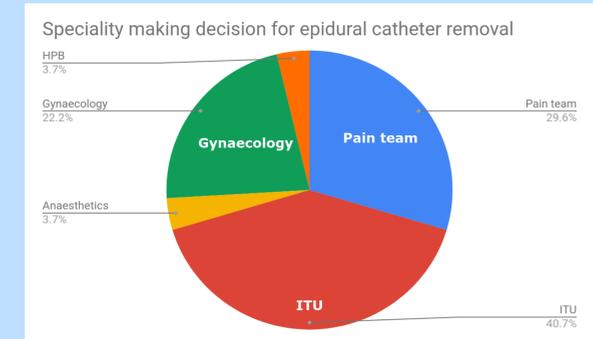
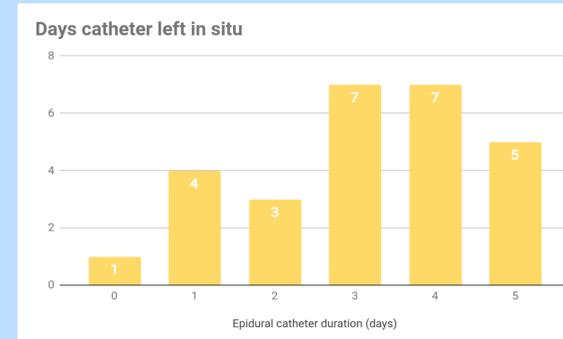
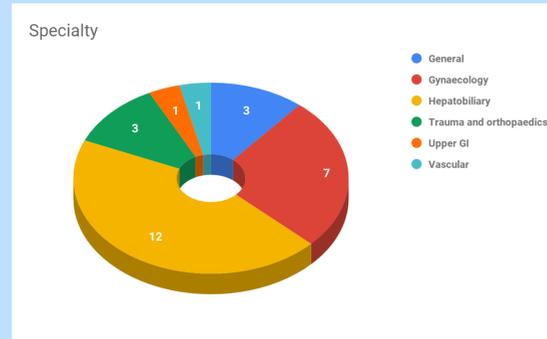
- Adult patients
- Major surgery or suffered traumatic injuries
- Received epidural analgesia

### Data:

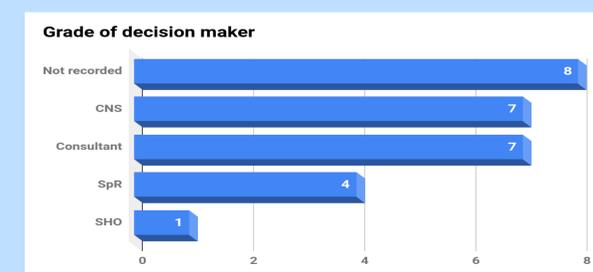
- 1 month sampling period (September - October 2018)
- Data collection performed by the inpatient pain service during routine pain daily ward rounds

## Results

27 patients received epidural analgesia after major surgery across 6 specialties including trauma



- 59% (16/27) of the epidural catheters worked well without adverse effects or failure
- 41% (11/27) required intervention



## Secondary failure – aetiology and management

Day of intervention	Reason	Intervention	Day removed
3	Patient septic, ? Epidural infection	Epidural catheter removed	3
3	Patient septic	Epidural catheter removed	4
1	Epidural fell out		1
4	Disconnection from yellow clip	Epidural catheter removed	5
1	Blood in dressing - redressed - catheter displaced	Paraveterbal block + morphine PCA	1
1	High sensory block, but pain on movement - pain uncontrolled despite increasing rate to 8ml/hr	Change to plain bupivacaine plus PCA	2
1	Bromage 3, inadequate sensory block	Plain bupivacaine plus PCA	4
0	Unilateral Bromage 2 - only resolved when epidural stopped	Rate weaned	1
0	Inadequate analgesia	Bolused with chirocaine - no effect - fentanyl PCA commenced	0
1	Epidural catheter blocked	Catheter pulled back by ICU	4
?	side effects - drowsy	Rate reduced - no change in symptoms - switched to plain epidural	3

## Conclusion

This service evaluation shows that the management of epidural analgesia takes place in heterogeneous clinical areas with variable staff skill mix and resources.

There was a relatively high incidence (41%;11/27) of secondary failure and of these 22% continued to provide analgesia following significant intervention.

The decision to stop epidural analgesia prematurely was made by various members of different teams.

The survey showed that a few patients epidural catheters were removed prematurely (7%).

Access to specialists with expertise in epidural management is important to continue to maximise benefit from epidural analgesia.

## Reference:

1) Ready LB Acute pain: lessons learned from 25,000 patients. Reg Anesth Pain Med 1999 vol. 24 (pg.499 -505) – about 30% failure rate