# Review of the current analgesic practice following extended / radical pleurectomy and decortication for the treatment of malignant mesothelioma in a Central London cardiothoracic hospital

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## Background

The incidence of malignant mesothelioma has been increasing since recording of this began in 1968[1]. Post-surgical pain following diagnostic, palliative and curative radical/extended pleurectomy surgery (thoracotomy incision) remains an issue. Many factors can affect the analgesic outcome including surgical technique[2], choice of analgesic, post-operative level of care, on-going input from the inpatient pain management service (IPS) and compliance with post-operative physiotherapy[3]. Important patient factors include patient education and psychological preparation[3]. Adequate pain relief following this particular surgery is essential to promote early mobilisation and improve recovery time.

Various analgesic techniques have been documented to provide superior pain relief with minimal side effects[2,4,5]. The decision as to which analgesic technique to use for a particular patient is usually the anaesthetist's and/or surgeon's preference and what services are available.

## Aim

The aim of this service evaluation was to review the efficacy of current pain management regimen of patients diagnosed with malignant mesothelioma following radical/extended pleurectomy and decortication surgery (thoracotomy incision).

## Methods

**Sample**
Patients who underwent extended/radical pleurectomy and decortication for the treatment of mesothelioma

The IPS collected retrospective data from January 2018 until August 2018.
The following data was collected at *24, 48* and *72* postoperative hours. The current pain management plan includes the insertion of an epidural catheter with an epidural infusion and step down to a standardised oral regimen. Epidural analgesia data such as level of insertion, epidural type, and rate of infusion were recorded on daily basis.
Comparison was also made between post-operative analgesic regimens and pain scores. Finally, length of stay in critical care and overall hospital stay was recorded.

**Data collected:**

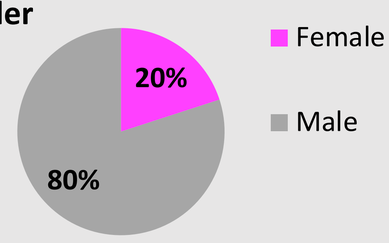
01 Patient demographics
02 Pain scores
03 Type of analgesic treatment
04 Epidural analgesia data
05 Treatment related side effects
06 Length of hospital stay

## Results

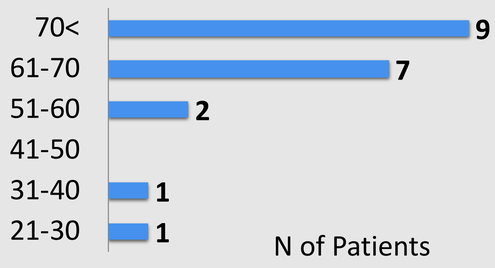
**N= 20** patients had an epidural catheter inserted for the management of postoperative pain following EPD surgery for malignant mesothelioma.

Mixed Epidural VS Plain Epidural

**Gender**




**Age**




**Moderate Pain at Rest**

**N=5/20** (25%) on Day 1 N=5 patients had a plain epidural.
**N=4/20** (30%) on Day 2 N=3/4 plain epidural and N=1/4 orals
**N=3/20** (15%) on Day 3 N= 3 had orals

**Moderate Pain on Movement**

**N=9/20** (45%) on Day 1 N=4/9 patients had a mixed epidural and N=5/9 plain
**N=9/20** (45%) on Day 2 N= 5/9 plain epidural, N=2/9 mixed, N= 2/9 orals
**N=5/20** (25%) on Day 3 N= 2/5 plain epidural, and N=3/5 orals

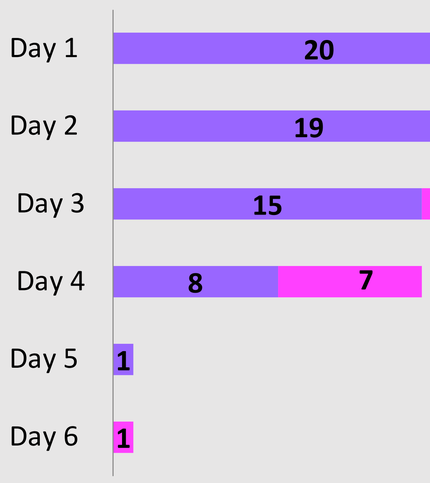
**Severe Pain at Rest**

**N=1** patient experienced severe pain at rest on Day 3 and was on orals

**Severe Pain on Movement**

**N=3** (15%) on Day 1 N=3 orals + plain epidural
**N=5** (25%) on Day 2 N=1/5 mixed epidural; N=2/5 plain epidural and N=2/5 orals
**N=7** (35%) on Day 3 N= 4/7 orals and N=3/7 plain and orals

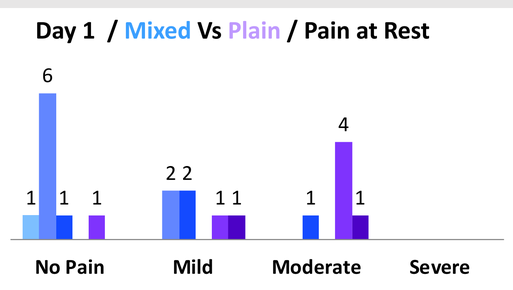
**Epidural catheters removed Vs In situ**



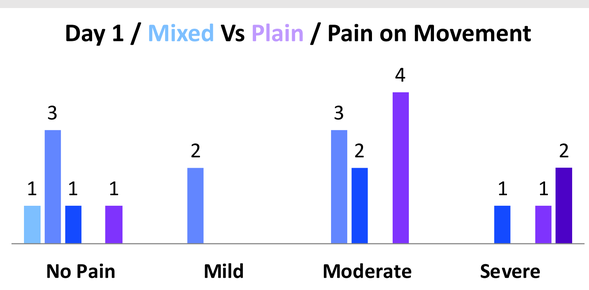

| Additional Regular Analgesics | Day 1 | Day 2 | Day 3 |
|---|---|---|---|
| Paracetamol | 20 | 20 | 18 |
| NSAID | 3 | 4 | 5 |
| weak opioid | 8 | 11 | 13 |
| strong opioid M/R and/or I/R | 2 | 2 | 4 |
| PCA | 1 | 1 | 0 |
| Antineuropathic | - | - | 1 |

| Additional PRN Analgesics | Day 1 | Day 2 | Day 3 |
|---|---|---|---|
| PRN weak opioid | - | - | 1 |
| PRN strong opioid I/R | 2 | 8 | 11 |

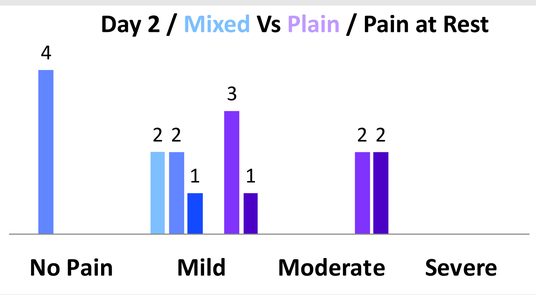
**Day 1 / Mixed Vs Plain / Pain at Rest**



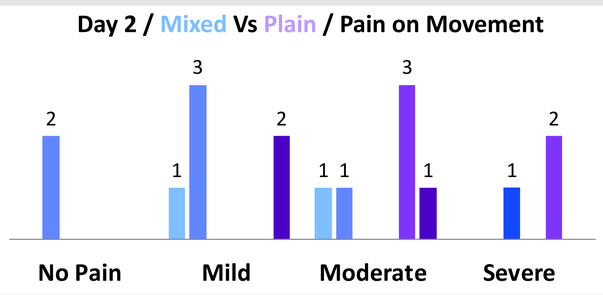

**Day 1 / Mixed Vs Plain / Pain on Movement**

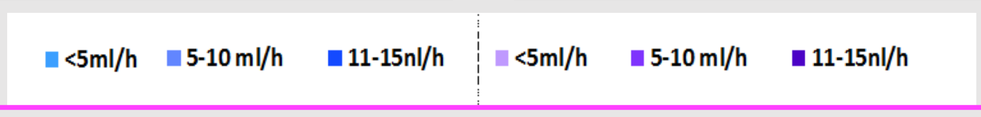



**Day 2 / Mixed Vs Plain / Pain at Rest**




**Day 2 / Mixed Vs Plain / Pain on Movement**




## Conclusion

Patients undergoing radical/extended pleurectomy surgery for the treatment of malignant mesothelioma would benefit from having a Bupivacaine/Fentanyl epidural infusion for 2- 3 days or more post-op. The results showed that patients whose epidural catheter was removed prior to day 3 post-op reported higher pain scores including severe pain at rest and/or on movement. Furthermore, 5-10ml/h Bupivacaine/Fentanyl epidural rate appears to adequately manage the patient's post-op pain. As expected, oral analgesics alone doesn't appear to effectively manage the post-operative pain. Our current pain management practice needs reviewing based on these results.