

## Entrapped Epidural Catheter Case

Salima S J Ladak\*, Gerald O'Leary, Rita Katznelson and Raynauld KO

Department of Anesthesia and Pain Management, Acute Pain Service, University Health Network, Toronto General Hospital, 200 Elizabeth Street, 3 Eaton North, Toronto, Ontario M5G2C4, Canada

### Abstract

An 81 year old male underwent lung and liver resection for cancer and was unable to have his epidural catheter removed on post-operative day 5. Following passing an 18" mandrill wire under fluoroscopy, the epidural catheter was successfully extracted.

### Introduction

Removing an epidural catheter rarely poses any technical difficulty. Few anaesthesiologists or Advanced Practice Nurses (APNs) having expertise in surgical pain management have personal experience in dealing with epidural catheters that cannot be removed by gentle traction [1]. The cause and location of the epidural entrapment is seldom apparent and the optimum approach to its extraction while avoiding catheter breakage is not evident [1].

### Case Description

An 81-year-old male underwent lung, chest wall and liver resection for a recurrent lung carcinoma. The epidural was sited at a T6 level intra-operatively by the surgeon through the surgical field. The depth of the epidural catheter was 10 cm. Anesthesia and surgery were uneventful and effective postoperative analgesia was achieved by patient controlled epidural analgesia with bupivacaine and hydromorphone for the first four postoperative days.

On the fifth post-operative day, the APS APN encountered significant resistance while trying to remove the epidural catheter. An anaesthesiologist confirmed that the catheter was trapped and could not be extracted despite firm traction while placing the patient in a variety of positions. The decision was made to leave the catheter in place and attempt its removal using a guide wire under fluoroscopy. While in the prone position the skin of the upper back was prepped and draped in a sterile fashion. The epidural catheter was cut and an 18" Mandrill wire was advanced through it under fluoroscopy until its tip was near but did not extend beyond the end of the epidural catheter. No knot or loop was observed. The wire and the intact epidural catheter were removed together without significant resistance. On subsequent visits, the epidural site remained free of inflammation.

### Discussion

Catheter entrapment is known complication of epidural analgesia and may occur at the all levels of the epidural space [2]. Proposed management of the entrapped epidural catheter includes visualization of the catheter by fluoroscopy, CT or MRI and based on the imaging findings may require removal of the catheter surgically. Non-surgical

options were described by [3] and include trying to remove the catheter while placing the patient in a variety of positions including the insertion, lateral decubitus, extreme flexion and extension positions and the injection of preservative-free normal saline through the catheter. These maneuvers were unsuccessful in our case. We had previous success in removing a trapped epidural catheter uneventfully by passing a wire through the catheter under fluoroscopy and so proceeded promptly to pursue this option again. In both cases the trapped catheters were removed easily and without complications while employing this technique. Although the using of a guide wire to identify an entrapped epidural catheter has been described previously, [4] to our knowledge, our case report is the first to demonstrate the utility of a guide wire for the non-surgical removal of trapped epidural catheters.

Rehnan et al. [4] described the use of the guide wire to visualize a knot in their trapped epidural catheter with fluoroscopy, which was subsequently surgically removed. Our case demonstrates that a guide wire may be useful not only for visualization and defining the causes of entrapment but also as a tool to potentially remove the catheter without proceeding to surgical intervention [5,6].

### Conclusion

Entrapped epidural catheters may be safely and easily removed using an 18" Mandrill wire.

### References

1. Macfarlane J, Paech MJ (2002) Another knotted epidural catheter. *Anaesth Intensive Care* 30: 240-243.
2. Gozal D, Gozal Y, Beilin B (1996) Removal of knotted epidural catheters. *Reg Anesth* 21: 71-73.
3. Mitra R, Fleischmann K (2007) Management of the sheared epidural catheter: is surgical extraction really necessary? *J Clin Anesth* 19: 310-314.
4. Rehnan EM, Peterson RA, Penning JP, Rosaeg OP, Chow D (2000) Visualization of a looped and knotted epidural catheter with a guidewire. *Can J Anaesth* 47: 329-333.
5. Beilin Y, Bernstein HH, Zucker-Pinchoff B (1995) The optimal distance that a multiorifice epidural catheter should be threaded into the epidural space. *Anesth Analg* 81: 301-304.
6. Muneyuki M, Shirai K, Inamoto A (1970) Roentgenographic analysis of the positions of catheters in the epidural space. *Anesthesiology* 33: 19-24.

\*Corresponding author: Salima S J Ladak, Department of Anesthesia and Pain Management, Acute Pain Service, University Health Network, Toronto General Hospital, 200 Elizabeth Street, 3 Eaton North, Toronto, Ontario M5G2C4, Canada, E-mail: [Salima.Ladak@uhn.ca](mailto:Salima.Ladak@uhn.ca)

Received March 26, 2013; Accepted July 25, 2013; Published July 27, 2013

Citation: Ladak SSJ, O'Leary G, Katznelson R, Raynauld KO (2013) Entrapped Epidural Catheter Case. *Emergency Med* 3: 147. doi:10.4172/2165-7548.1000147

Copyright: © 2013 Ladak SSJ, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.