

Uniportal Nuss procedure for pectus excavatum, where to place the camera?—but we've always done it this way

Ivan Schewitz

Department of Cardiothoracic Surgery, Pretoria University, Pretoria, South Africa

Correspondence to: Dr. Ivan Schewitz, M.B, Ch.B. (UCT), FCS (SA). Department of Cardiothoracic Surgery, Pretoria University, Pretoria, South Africa. Email: ivan@schewitz.com.

Abstract: This study was stimulated by the increasing use of uniportal thoracoscopic surgery. If a lobectomy can be performed through one small incision why not the much simpler Nuss procedure? The Nuss procedure was performed with the use of the surgical incision for the camera. Initially the patient was positioned so that the standard site for the camera could be utilized. Once it became obvious that the uniportal approach worked the patient was positioned in the middle of the table. In all cases the uniportal approach in my hands was easy and made the operation less cumbersome. I offer this approach to simplify the operation.

Keywords: Thoracoscopy; uniportal; pectus excavatum; Nuss procedure

Received: 04 February 2017; Accepted: 08 February 2017; Published: 31 March 2017.

doi: 10.21037/jovs.2017.03.10

View this article at: <http://dx.doi.org/10.21037/jovs.2017.03.10>

Introduction

Every surgeon has his own preferences. In observing the Nuss procedure performed in different centers I have seen the camera placed in line with the bar, superiorly and inferiorly but always through a separate incision. The patient is placed at the edge of the operating table allowing the camera to be angled in the direction of the sternum without being obstructed by the table. Gonzalez-Rivas has popularized uniportal thoracic surgery (1-3). If a lobectomy can be performed with one incision for the camera and instruments, then why not the Nuss procedure?

Procedure

The patient is placed in the center of the operating table as in most supine procedures with the arms at right angles (Figure 1). A 0 degree or a 30 degree, 5 mm camera is used (Figures 2-5). The initial study was with 12 cases. The camera was inserted in the same incision as the bars. The incisions made on both sides as usual. Two bars can be inserted with an uniportal approach (Figure 6).



Figure 1 Positioning of patient supine in middle of the table.

Results

In all cases vision was as good and in some cases better than with the alternate approaches. Both sides can be visualized without any extra incisions (Figures 7,8) There is no obstruction to the camera when pointing at the sternum. Previously when I used a separate incision the camera required to be angled to visualize the sternum. The edge of the table or the arm would be obstructing the



Figure 2 Uniportal position of camera.



Figure 6 Two introduces in place.

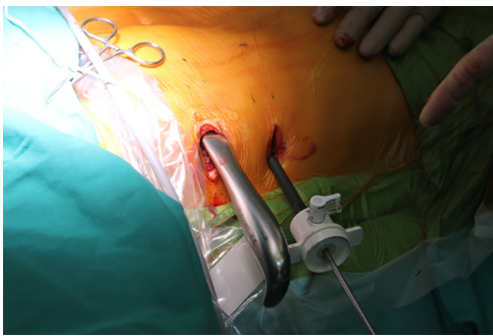


Figure 3 Second bar.



Figure 7 Vision before insertion of bar.



Figure 4 Subcutaneous tunneling.

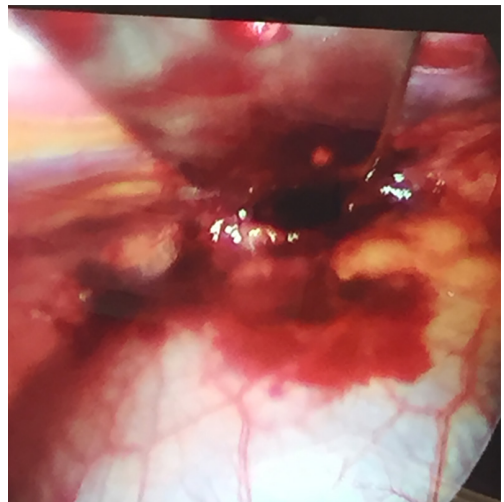


Figure 8 Vision after insertion of bar.

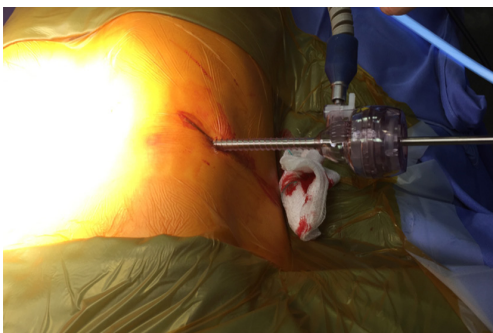


Figure 5 Uniportal camera insertion.

thoracoscope. No complications have been experienced with the uniportal approach. In my hands this approach gives better visualization without the need for alternative ways of positioning the patient. Previous positioning of the patient with the arm on an overhead screen or the patient at the edge of the table is unnecessary.

Discussion

The secret of a successful Nuss procedure for repair of pectus excavatum is adequate visualization of the internal organs when the bar is inserted. The insertion of the camera is vital to look towards the sternum as the introducer is placed across the chest. In observation of many units I noticed that the patient is placed on the edge of the right side of the table. This means that the surgeon needs to determine on which side the camera is to be inserted before the procedure is commenced. Occasionally the surgeon would like to view the sternum from the left side; however this requires re-positioning of the patient. The arm is sometimes placed on an overhead screen to move it away from the camera. The camera is inserted through a separate incision, in a more superior position, in line with the bar or in a more inferior position. Positioning in an inferior position has resulted in reported cases of the diaphragm being perforated. The more superior position may conflict with the arm. A more posterior position may conflict with the operating table even if the patient is on the edge. To get adequate visualization, the camera may be bent destroying it (occurred with an over-zealous assistant in one of my cases).

In observing Prof. Gonzalez-Rivas, I attempted a uniportal approach finding that vision were more than adequate and in some cases better than the superior

approach I used previously. The advantage is that the patient may be placed in the middle of the operating table allowing the camera to be used on both sides. The use of the same incisions makes the decision to consider inserting the camera on both sides easy. The arms placed in a lateral position are out of the way. In my hands this operation has been simplified.

Conclusions

This has become my preferred camera position. I am offering an alternative view, which I believe gives advantages.

Acknowledgements

None.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

References

1. Gonzalez-Rivas D, Fernandez R, de la Torre M, et al. Thoracoscopic lobectomy through a single incision. *Multimed Man Cardiothorac Surg* 2012;2012:mms007.
2. Gonzalez-Rivas D, Fieira E, Delgado M, et al. Uniportal video-assisted thoracoscopic lobectomy. *J Thorac Dis* 2013;5 Suppl 3:S234-45.
3. Gonzalez-Rivas D. Uniportal video-assisted thoracic surgery. *Ann Cardiothorac Surg* 2016;5:75.

doi: 10.21037/jovs.2017.03.10

Cite this article as: Schewitz I. Uniportal Nuss procedure for pectus excavatum, where to place the camera?—but we've always done it this way. *J Vis Surg* 2017;3:42.