Triangular retractor facilitates minimally invasive lobectomy

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Video-assisted thoracic surgery (VATS) lobectomies are feasible, preferred at certain centers, and gaining in popularity.1 Yet some VATS maneuvers remain difficult or clumsy compared with open techniques, such as lifting the partially disected lobe by hand away from the hilum to find remaining connections.

Technique
Diamond-flex triangular retractor system (Snowden-Pencer, Tucker, Ga) devices begin as flexible, snakelike, hollow, 5-mm metal tubes composed of small individual sections threaded over internal tension cables anchored to the tips. The individual tubular sections are cut obliquely so that when the internal metal cables are tightened, the retractors conform into triangular shapes. Typically, each retractor is inserted while loose and flexible though a 5-mm port and then conformed within the open abdominal cavity to retract the liver or other structures.

This tool controls nearly freed upper lobe lung specimens as well. After most of the incomplete fissure tissue and pulmonary vascular attachments have been divided, a Diamond-flex retractor can be passed through a working port and curled around the lung specimen. By using an anterior working port, the device will slide naturally along the anterior thoracic apex and then loop inferiorly around the base of the upper lobe. Then the retractor is conformed by tightening the screw in the handle with its tip in view so that it does not curl into delicate hilar structures. Given its relatively small diameter, additional tools can be passed through the same 10-mm working incision.

This instrument is manufactured in straight or angulated conformations of different lengths. We prefer a straight 60-mm device, but the best size is selected according to the thoracic cavity and lung size. Figure 1 demonstrates the control of the right upper lobe afforded by this method. In addition, a linear cutting stapler is depicted ready to complete the lobectomy by dividing the right upper lobe bronchus.

Once the specimen has been freed from its attachments, extracting it can be difficult. This maneuver is facilitated by inserting the nylon sac (Lapsac; 5 × 8 in; Cook Group, Inc, Bloomington, Ind) through the access incision and controlling one portion of the sac externally. Additional points of fixation are needed to open the sac. Although this can be accomplished with instruments or sutures, the above retractor creates a base to yield a nice triangular opening. If needed, saline instillation or the retractor can help open the rest of the empty sac.

Figure 1. Retractor control of the upper lobe.

Figure 2. Control of the sac opening.
Successful subtotal tracheal replacement (using a skin/omentum graft) for dehiscence after a resection for thyroid cancer

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Tracheal resection is still one of the greatest challenges in the treatment of tracheal tumors. The maximum amount of trachea that can be resected during resection-anastomosis is around 50%, but, when a larger resection is required, the risk of postoperative dehiscence increases, followed by a very elevated risk of postoperative death.

We report on our experience with treating a tracheal anastomotic dehiscence that developed after an extended tracheal resection was performed for a thyroid tumor relapse. The technique used to repair the dehiscence, a composite skin/omentum/muscle graft, permitted restoration of tracheal continuity and of a normal respiratory function.