Partial and complete lobectomy

A presentation by: Afsane Ghariby

Partial lobectomy

- to remove a focal lesion involving the peripheral one half to two thirds of the lung lobe.
- biopsy

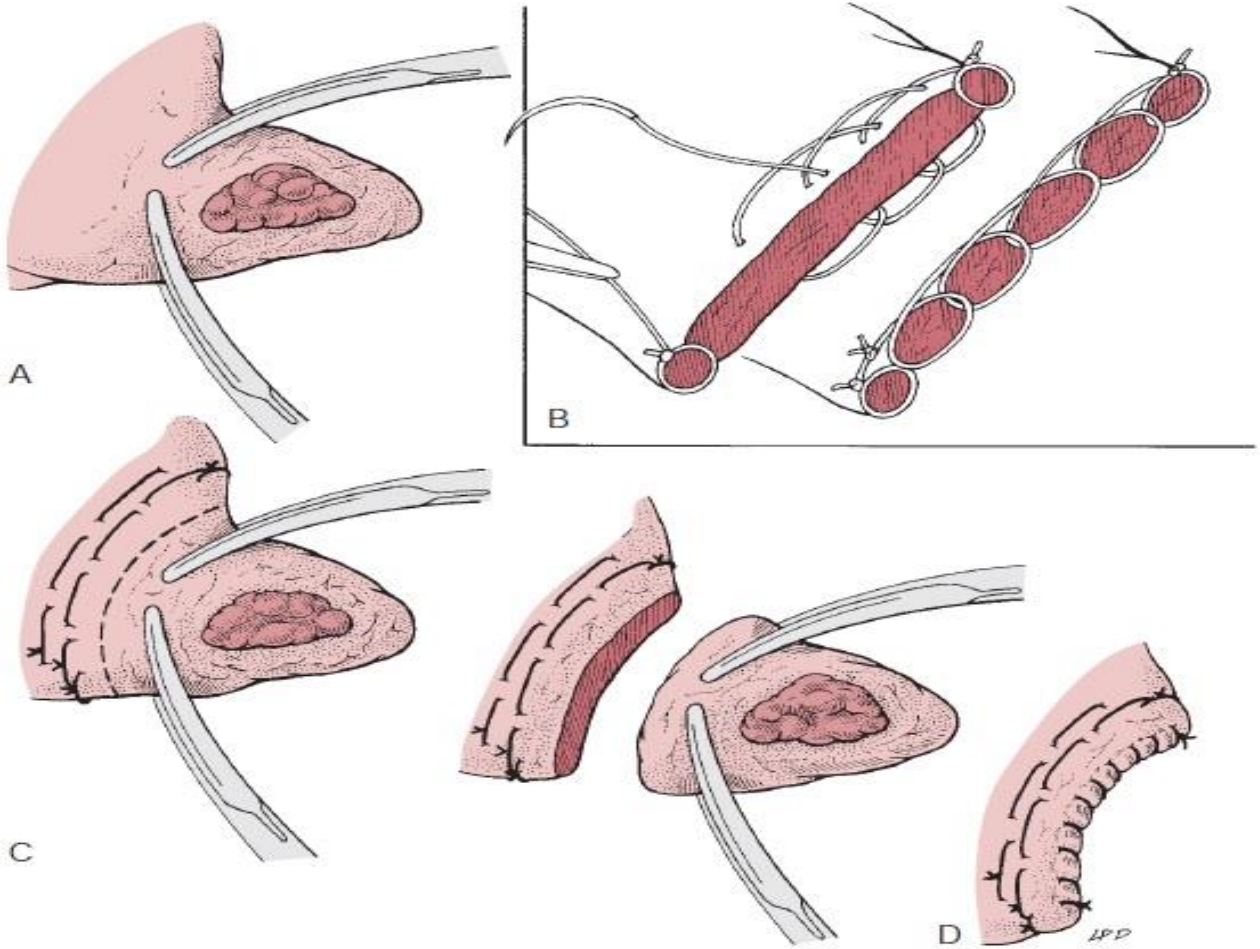

FIG 30-9. Partial lobectomy may be performed through an intercostal thoracotomy or a median sternotomy. **A,** Identify the lung tissue to be removed and place a pair of crushing forceps proximal to the lesion. **B,** Place a continuous, overlapping suture pattern proximal to the forceps. **C,** Excise the lung between the suture lines and clamps. **D,** Oversew the lung in a simple continuous pattern with absorbable suture.

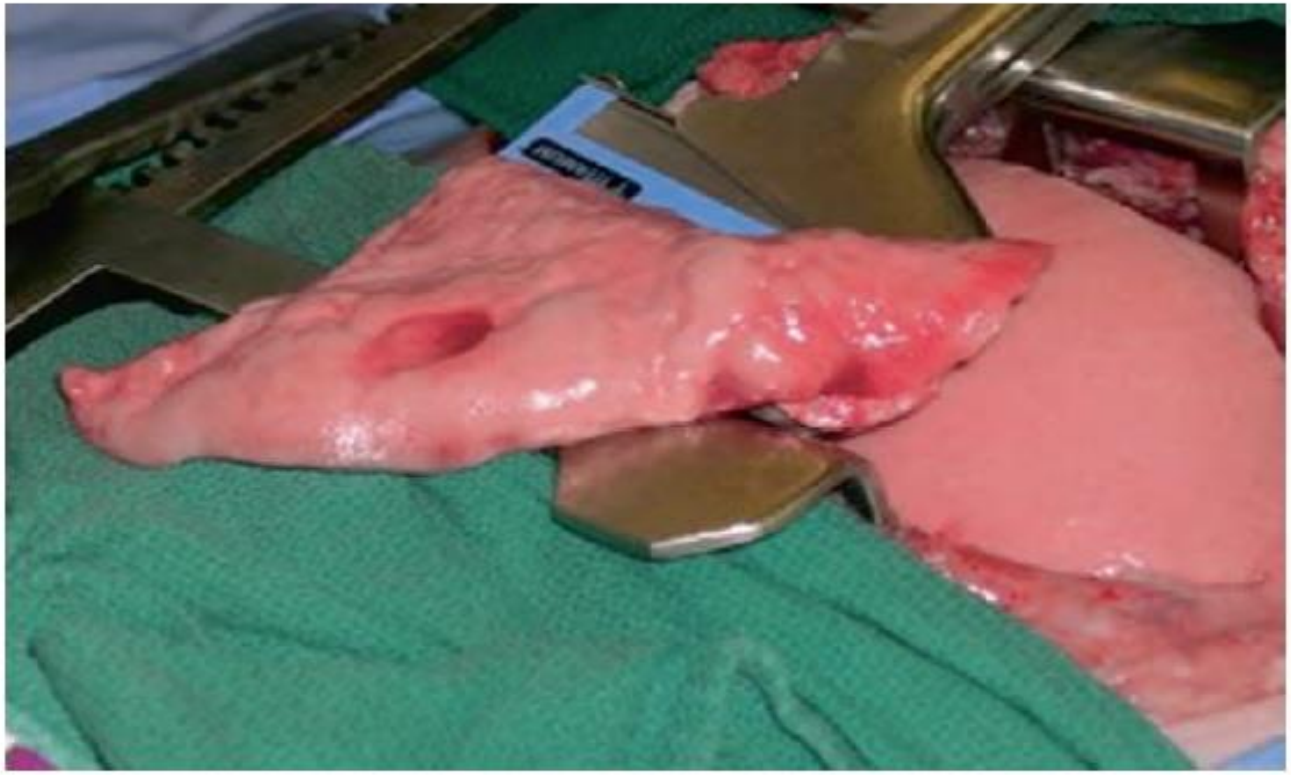

FIG 30-10. Intraoperative image of a partial lobectomy using a thoracoabdominal (TA) stapler.

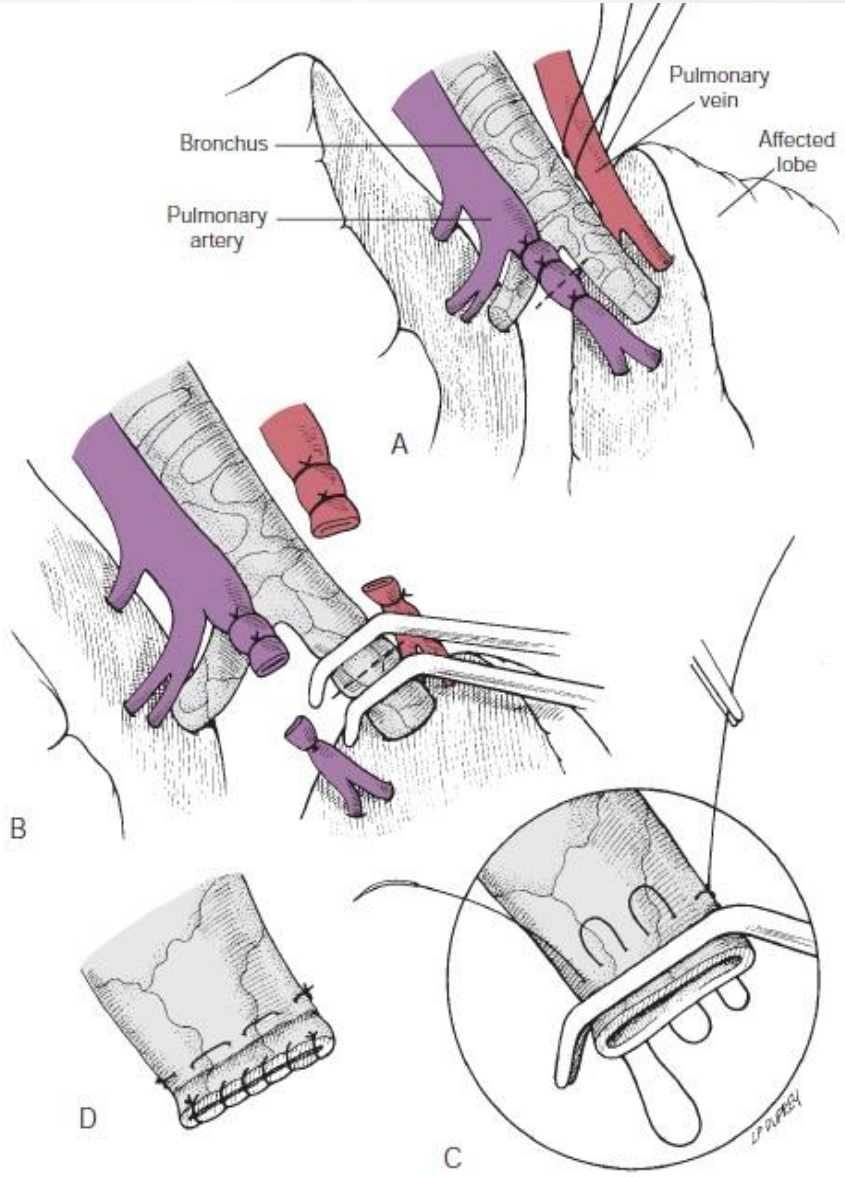

FIG 30-11. Complete lobectomy. **A,** Ligate and transect the vasculature to the affected lobe. **B,** Clamp the main bronchus with a pair of Satinsky or crushing forceps; sever the bronchus between the clamps and remove the lung. **C,** Suture the bronchus in a continuous horizontal mattress pattern. **D,** Oversew the end in a simple continuous suture pattern.

FIG 30-12. Right-angled forceps *(upper)* and Satinsky clamp *(lower)*.

HEALING OF THE LUNGS AND STERNUM

- After multiple lobectomies or partial lobectomy of several lobes, expansion of the remaining lung may occur in an attempt to restore normal lung volume; therefore, exercise intolerance may decline in some animals with time after pneumonectomy.
- The healing of median sternotomies has been a matter of concern; however, these incisions heal readily and without complication even in animals with pyothorax if the closure is performed properly.

SUTURE MATERIALS AND SPECIAL INSTRUMENTS

- Absorbable or nonabsorbable suture material can be used for complete lobectomy.
- braided, multifilament, nonabsorbable suture (e.g., silk) should be avoided if infection is present.
- Finochietto rib retractors, Satinsky clamps (for clamping the bronchus) and right-angled forceps (such as Mixter forceps [also known as gallbladder or gall ductduct forceps or thoracic forceps]) Sternal saw or bone saw : median sternotomy, particularly in medium or large dogs.
- Vacuum suction devices: removal of the fluid placed in the chest to identify air leaks.
- TA staplers

POSTOPERATIVE CARE AND ASSESSMENT

- Respiration monitoring
- respiratory excursions inadequate: chest evaluated for residual air
- thoracic radiographs should be examined for pneumothorax.
- Blood gas analysis: adequacy of ventilation;
- hypoxic animals:oxygen by nasal insufflation or oxygen cage.
- severe or progressive hypoxemia evaluated for :pulmonary edema.
- Median sternotomy :decreased ventilation compared with intercostal thoracotomy.
- Analgesics
- Hypothermia: warm water bottles and circulating water or warm air blankets.

Complications

- wound complications
- thoracic drain
- Subcutaneous fluid accumulation at the ventral aspect of the thoracotomy incision occasionally occurs but can be avoided by carefully closing the distal musculature (i.e., serratus ventralis and pectoralis muscles).
- air leakage or hemorrhage (or both).
- With median sternotomy, adequate closure and leaving several sternebrae intact prevents delayed healing or non-union of the sternebrae.
- Postoperatively, lameness associated with pain and severing of the latissimus dorsi muscle can occur but usually resolves within 1 to 2 days.

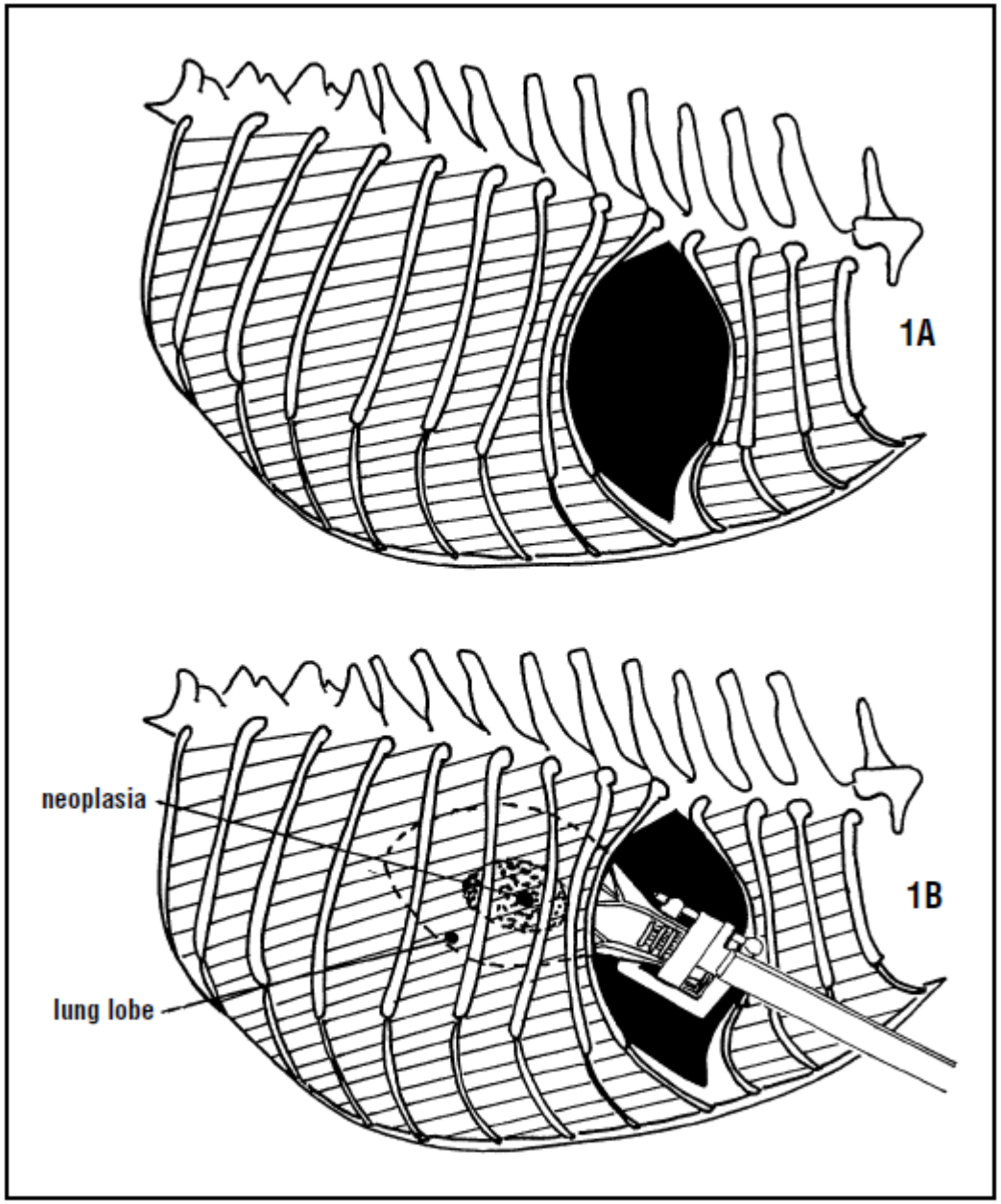

Figure 1: This schematic drawing depicts: **1A)** A right-sided T4-T5 thoracotomy. **1B)** The application of a TA 30-V auto-suture machine across the bronchus, the artery and the vein.

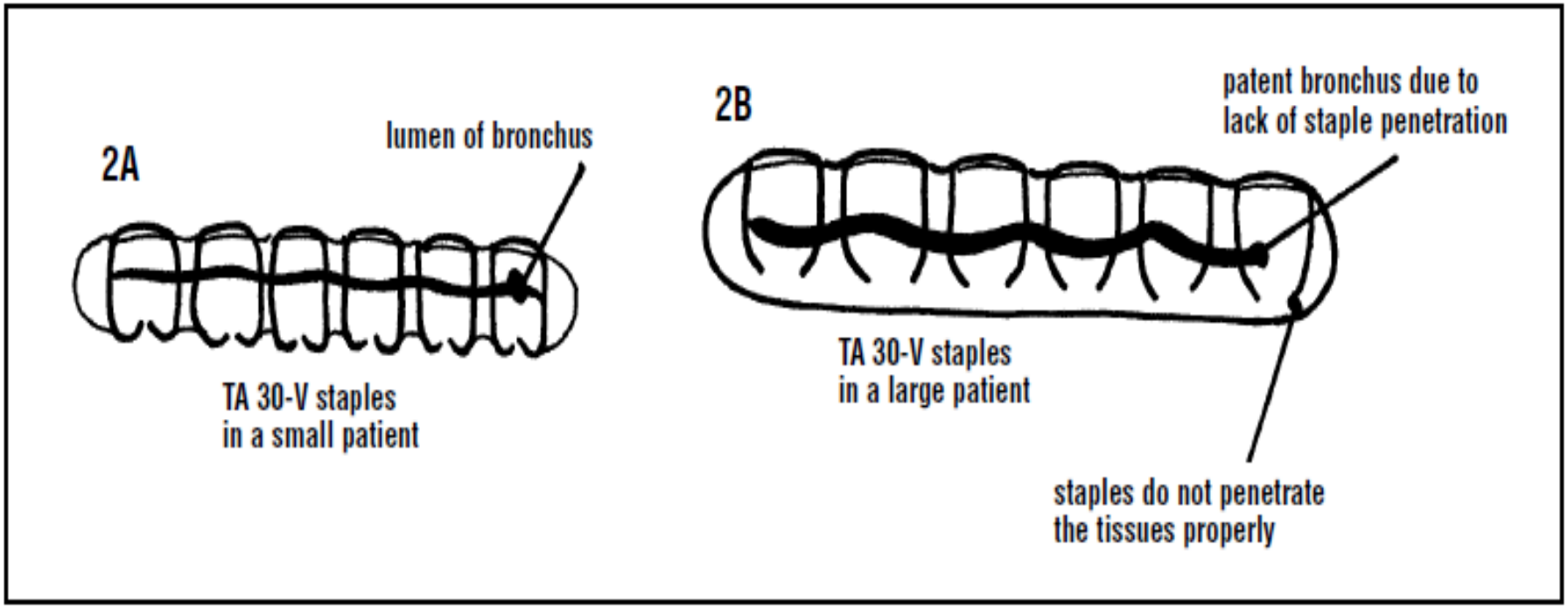

Figure 2: This schematic drawing depicts: **2A)** The use of a TA 30-V auto-suture machine in a small patient, Note that the staples penetrate the tissues properly turning back on the themselves securely sealing the vessels and the bronchus. **2B)** The use of a TA 30-V auto-suture machine in a larger patient. Note that the staples do not penetrate the tissues completely, and the bronchus and vessels could remain patent.

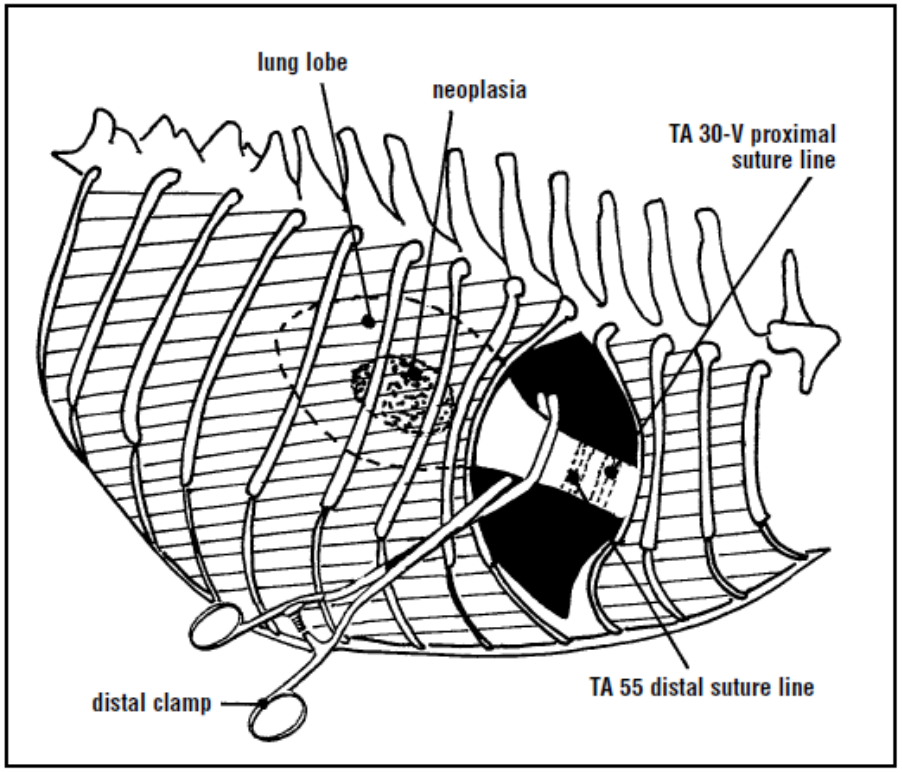

Figure 3: This schematic drawing depicts a forceps applied to the distallung prior to resection and lobectomy.

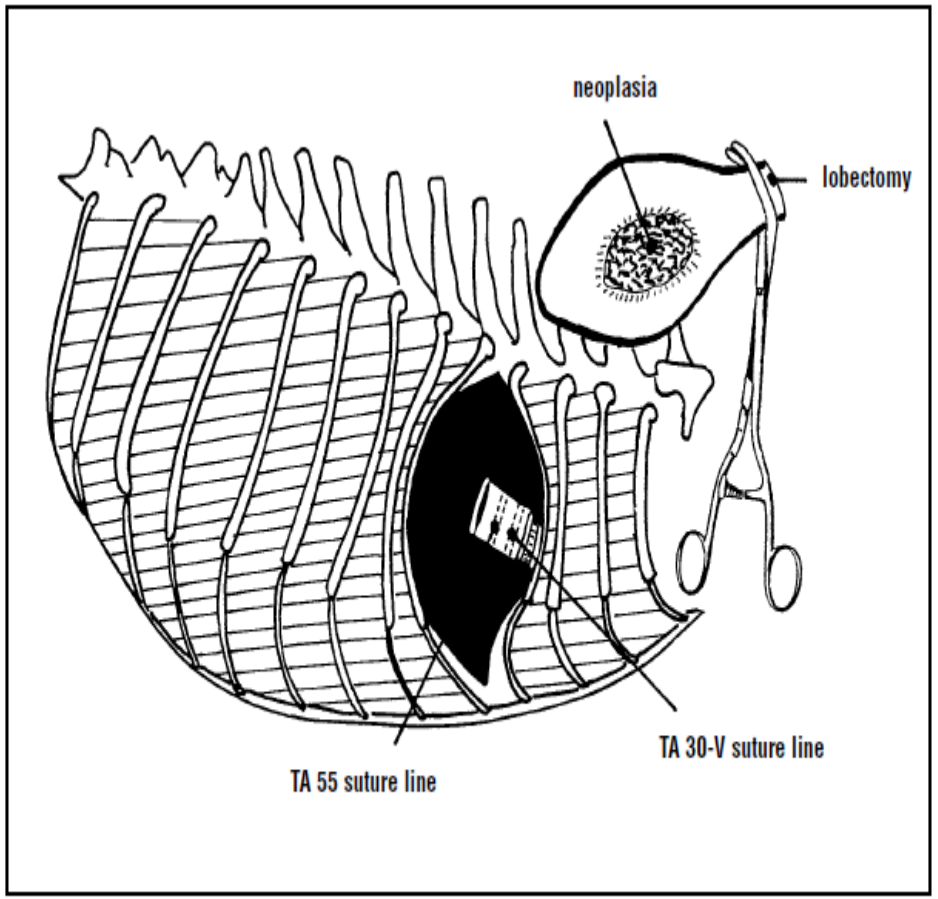

Figure 4: This schematic drawing depicts the lobectomy with the remaining proximal bronchus, artery and vein secured by the TA 30-V and the TA 55 auto-suture machines.

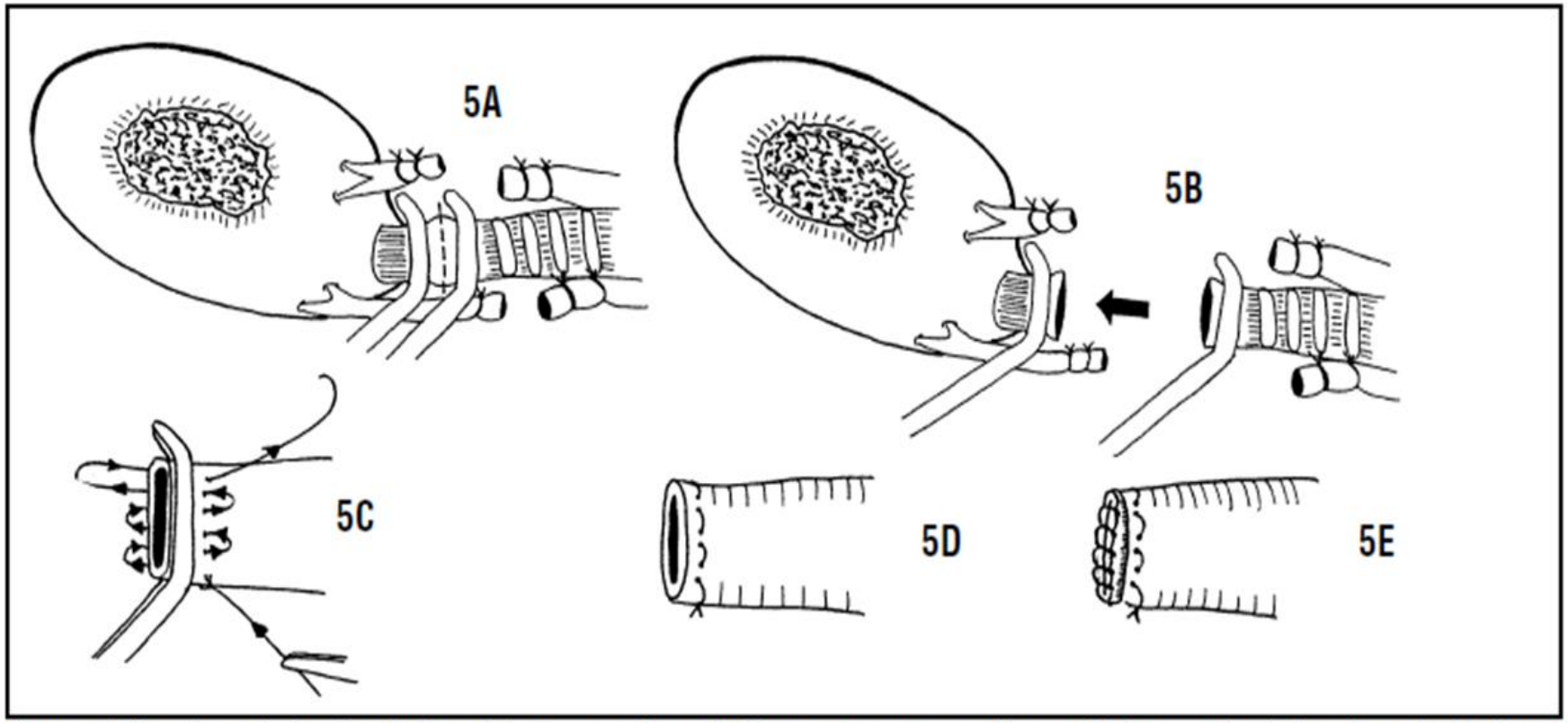

Figure 5: This schematic drawing depicts a lobectomy performed without auto-suture machines. **5A)** Artery and vein have been doubly ligated and a forceps has been applied across the bronchus. **5B)** The lobectomy **5C)** This shows the path of the needle in the horizontal mattress suture pattern applied across the distal bronchus. **5D)** finished horizontal mattress suture with the clamp removed **5E)** Over sewing the stump of the bronchus with a simple continuous pattern.

THE END.....