SUBXIPHOID UNIPORTAL VATS FOR BILATERAL BULLECTOMY: A CASE REPORT AND LITERATURE REVIEW

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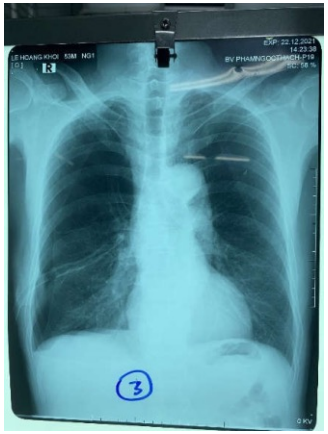
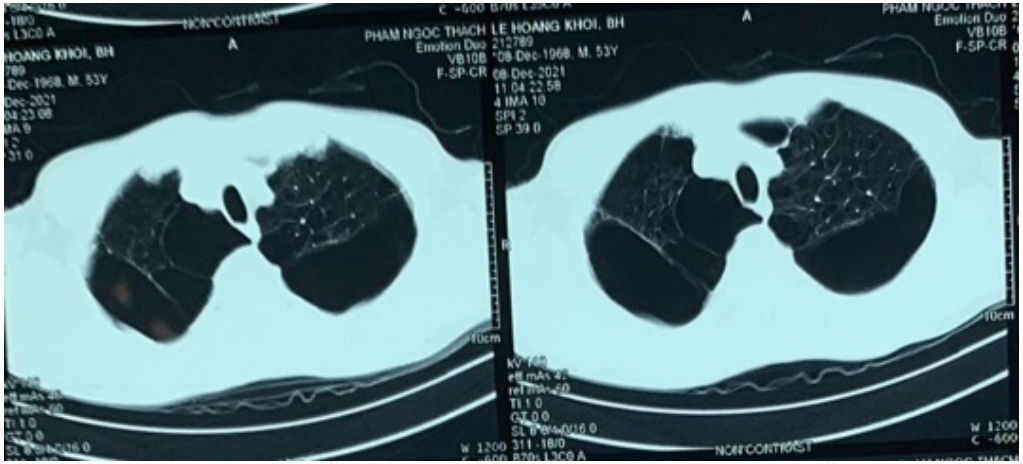
introduction

- Pneumothorax (PTX) : 18-28/100000 men/year, 1.2-6/100000 women/year
- PTX with contralateral (CL) blebs/bullae: 53.6%.
- In those cases: 26.7% occur pneumothorax
- Indications and operative techniques: prevent ipsilateral (Ips) recurrence
- Method to confront with CL blebs/bullae: haven’t got consensus yet.
- Many techniques have been reported
- Recently one-stage subxiphoid uniportal bilateral (bil) bullectomy (SUBB) get noticed.

CASE PRESENTATION

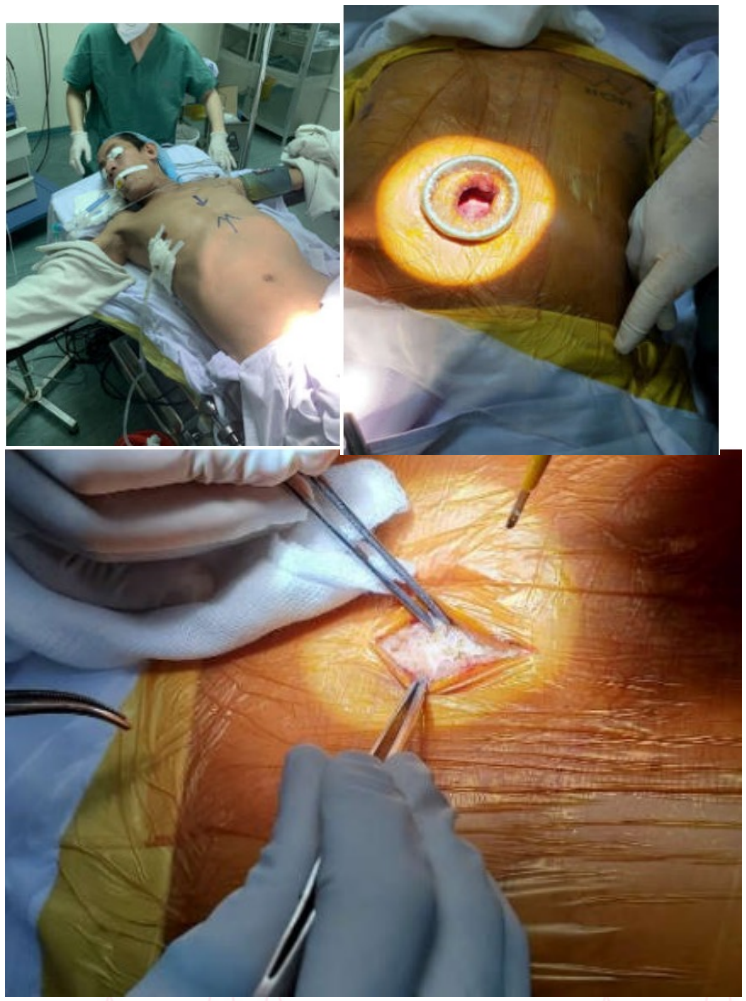
- A 53 year-old male
- Without history of pul disease
- 3 months ago: right-sided PTX, chest tube only
- This time: right-sided recurrent PTX
- First treatment: chest tube
- Ct scan: bil bullous disease
- SUBB was planned





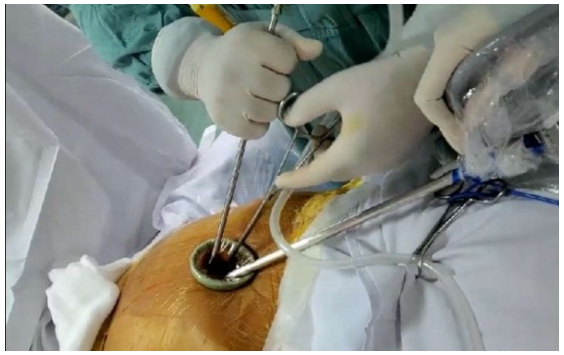
CASE PRESENTATION

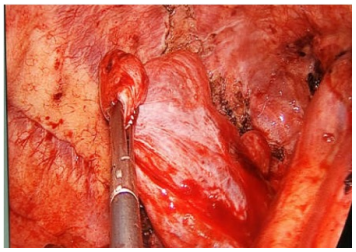
- Anesthesia: double lumen ET intubation, selective lung ventilation
- Position: supine, using a cushion at xiphoid process level.
- Incision: 5cm vertical below the sternocostal triangle
- blunt finger dissection at retrosternal space, using a wound retractor
- Insertion a 30 degree 10 mm camera

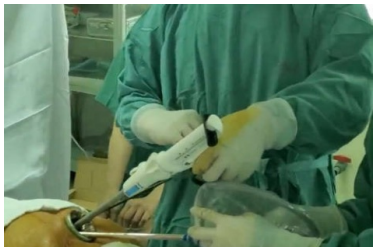


FIRST STAGE: ON THE RIGHT SIDE

- Surgical team on the left side
- OPR table left-sided rotates about 15^0
- Blunt dissection, enter the right pleural cavity
- Explore: large bullae in lung apex, mild adhesions.
- Pleural dissect, bullae identified, resected by stapler
- Pleural abrasion to fifth intercostal level
- Lung expand, switch to left-sided stage

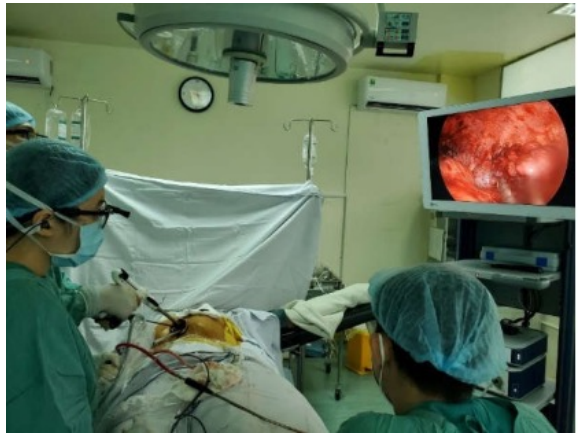


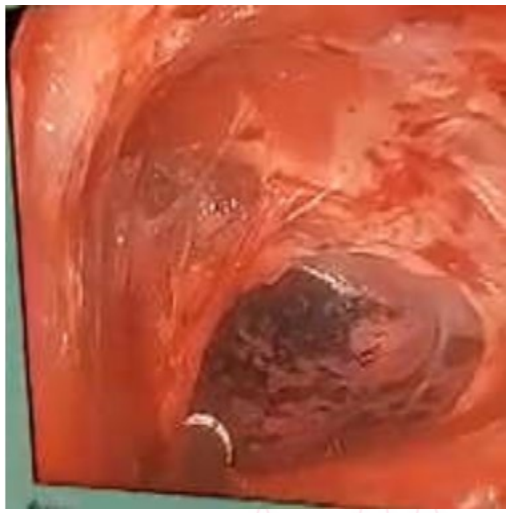


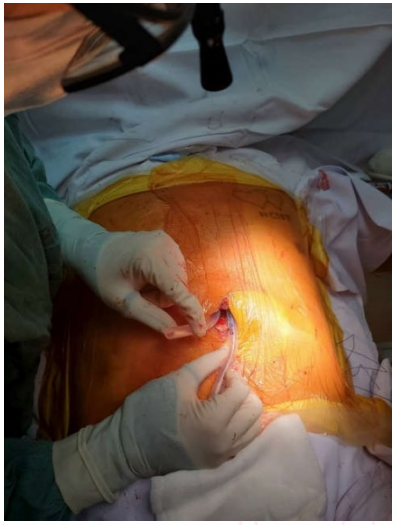


SECOND STAGE: LEFT SIDE AND FINISH

- Surgical team on the right side
- OPR table right-sided rotates about 15^0
- The same technique as right side
- More difficult: more adhesions, impeding by the heart
- Two 32F drains via the subxiphoid incision
- OPR time 255 minutes, blood loss 200ml

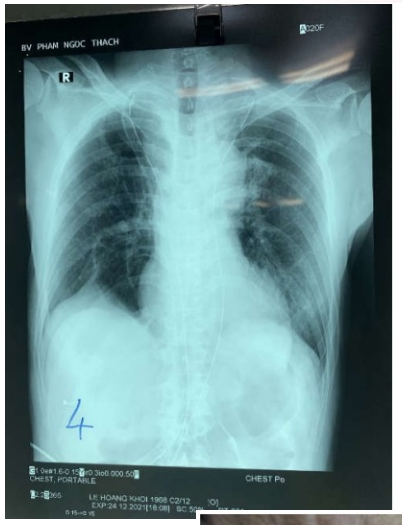


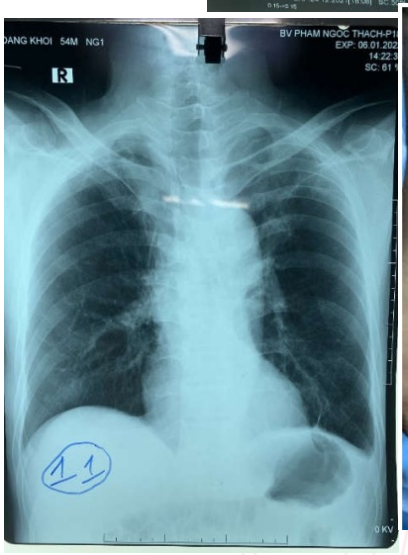


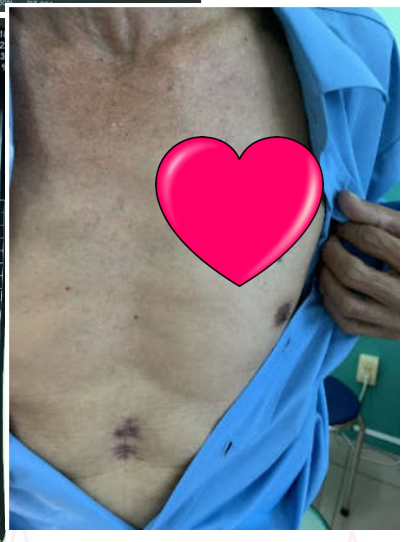


POST OPERATING STAGE

- Pod 0: moderate air leak, mild pain
- Pod 1-5: air leak decreases, less pain, lung expand
- Pod 6: right-sided drain removed
- Pod 13: left-sided drain removed, x-ray lung fully expand.
- re-examination after 1 week and 1 month: good x-ray, not recurrence, good scar, no pain.







Literature review

- **The first question: should we abandon or take action with contralateral bleb/bulla in pneumothorax patient?**
- A.D. Sihoe 2000, Chest:
  - 53.6% PSP have CL blebs/bullae
  - 26.7% developed PSP
  - Conclusion: The detection of lung bullae by CT scanning in the CL lung following unilateral PSP is associated with a higher rate of subsequent occurrence of PTX in that lung

Can CT Scanning Be Used To Select Patients With Unilateral Primary Spontaneous Pneumothorax for Bilateral Surgery?*

Alan D. L. Sihoe, MB, BChir; Anthony P. C. Yim, DM, FCCP; Tak Wai Lee, MB ChB; Song Wan, MD, PhD; Edmund H. Y. Yuen, MB ChB; Innes Y. P. Wan, MB, ChB; and Ahmed A. Arifi, MD

Literature review

- SH Chou 2010, The Journal of Thoracic and Cardiovascular Surgery.
  - Prospective study
  - Divide 3 groups
  - Conclusion: preemptive video-assisted thoracic surgery for the CL blebs/bullae effectively prevented the CL occurrence

Is prophylactic treatment of contralateral blebs in patients with primary spontaneous pneumothorax indicated?

Shah-Hwa Chou, MD,[a,b] Hsien-Pin Li, MD,[a] Jui-Ying Lee, MD,[a] Shun-Jen Chang, MD,[c] Yen-Lung Lee, MD,[a] Yu-Tang Chang, MD,[a] Eing-Long Kao, MD,[a,b] Zen-Kong Dai, MD,[b,d] and Meei-Feng Huang, RN[a]

	U-CB	U+CB	BV
n	35	35	16
%CO	2.86	17.14	0

BV: bilateral VATS with CL blebs
CO: CL occurrence
U-CB: unilateral VATS without CL blebs
U+CB: unilateral VATS with CL blebs

The second question: how have we been treating with the problem?

- In the past:
  - Baronofsky 1957: bilateral open thoracotomy.
  - Ikeda 1988: median sternotomy

=> Nowaday, too aggressive, a lot of pain.

BILATERAL THERAPY FOR UNILATERAL SPONTANEOUS PNEUMOTHORAX

IVAN D. BARONOFSKY, M.D.,* HORACE G. WARDEN, M.D. (BY INVITATION), JAMES L. KAUFMAN, M.D. (BY INVITATION), JOSEPH WHATLEY, M.D. (BY INVITATION), AND JOSEPH M. HANNER, M.D. (BY INVITATION)
SAN DIEGO, CALIF.

Median sternotomy with bilateral bullous resection for unilateral spontaneous pneumothorax, with special reference to operative indications

IN THE ERA OF VATS

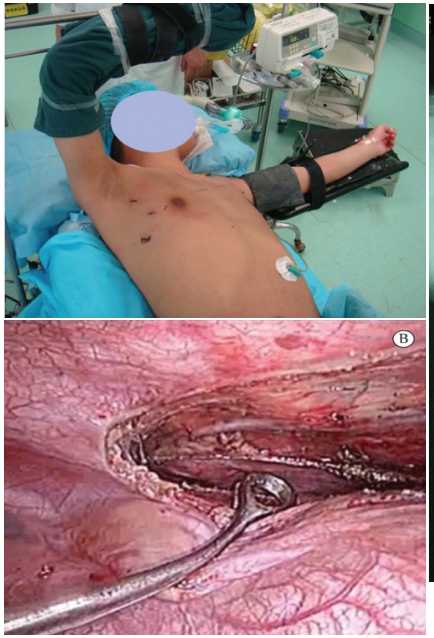
- Nan Song 2013, jornal Brasileiro de Pneumologia.
  - Ips bullectomy and pleural abrasion, CL bullectomy only.
  - Five cases, one recurrence CL side

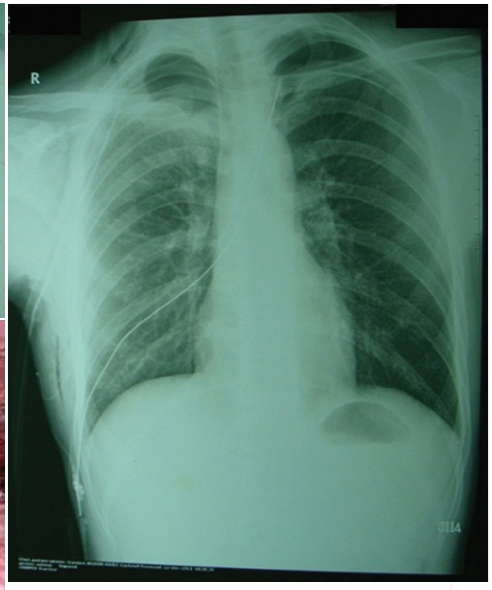
=> Difficult to manipulate on the CL side, potential complication and recurrence on CL side.

Bilateral bullectomy through uniportal video-assisted thoracoscopic surgery combined with contralateral access to the anterior mediastinum*,**

Bulectomia bilateral por cirurgia torácica vídeo-assistida uniportal combinada com acesso contralateral ao mediastino anterior

Nan Song, Gening Jiang, Dong Xie, Peng Zhang, Ming Liu, Wenxin He

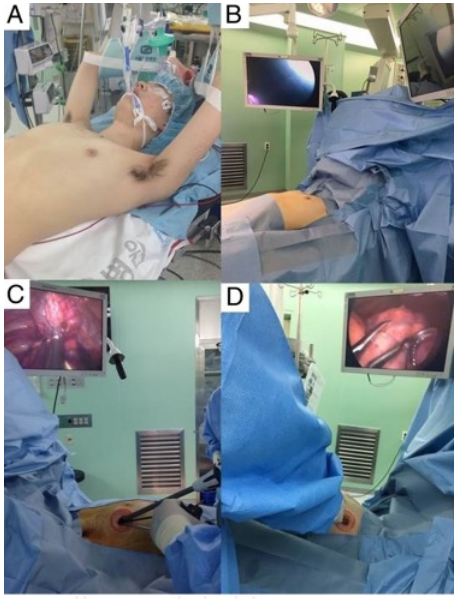




- Kim 2017, Journal of Cardiothoracic Surgery.
- Case report
- Conclusion: more cosmetic, remove the needs of changing patients' position

Single-staged uniportal VATS in the supine position for simultaneous bilateral primary spontaneous pneumothorax

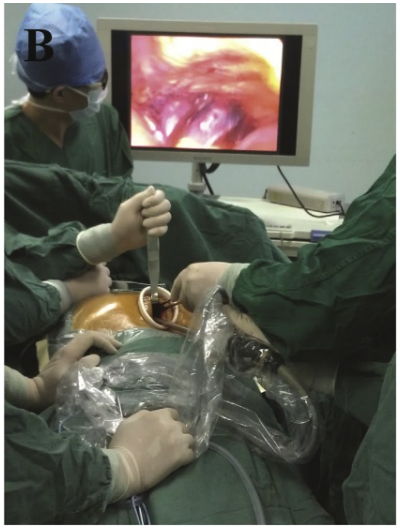
Kyung Soo Kim

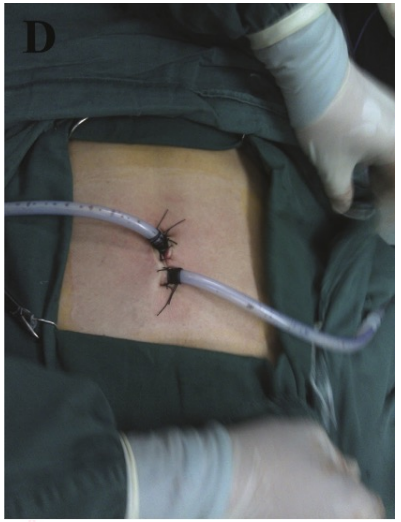


- Lin Li 2016, international Journal of Surgery.
- 43 SPP. 22 patients were treated by the subxiphoid single-incision VATS, 21 patients were treated using the conventional intercostals uniport VATS
- Conclusion: SUVATS could decrease the PO pain but, demanded longer surgical time comparing with the intercostal uniport VATS.

Subxiphoid vs intercostal single-incision video-assisted thoracoscopic surgery for spontaneous pneumothorax: A randomised controlled trial

Lin Li, Hui Tian*, Weiming Yue, Shuhai Li, Cun Gao, Libo Si






Thank
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