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Nothing but guidelines

Pneumothorax in BTS pleural disease 2023 for UK-based clinicians

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Limitations and Abbreviations

Limitations

- Healthcare providers > guidelines
- Just English article

Abbreviations

- SP: Spontaneous Pneumothorax (no trauma or causative intervention)
- PSP: Primary SP
- SSP: Secondary SP or over 50 yrs smoking history
- AM: Ambulatory Management = Heimlich valve
- CM: Conservative Management
- NA: Needle Aspiration
- ICD: Intercostal Chest Drainage
- 고려해야: should
- 고려가능: can

Initial managements

CM 고려 가능

- 무증상 PSP면 **크기와 무관**
- 최소 증상 (no significant pain or breathless, and no physical compromise)

PSP의 초치료로 AM 고려 해야. → CM, AM 불가 → NA or ICD 고려 해야.

- NA ≒ ICD < CM or AM

SSP 예방 (첫 기흉에도) → 화학적 늑막유착술 고려 가능.

재발 방지가 가장 중요하면? (긴장성 기흉, 고위험 직업군)

- 첫 기흉 시 수술 고려 가능.

After resolution of 1st episode.

재발 방지가 중요한 경우 (긴장성 기흉, 고위험 직업군)

- Elective surgery 고려 가능.

동측 재발, 반대측 초발

- 수술 고려 해야.

퇴원, 활동 설명

- 모든 환자에게 반드시 제공.

Prolonged air leakage ?

수술 (유착술 ± bullectomy) 고려 해야

- 수술 유착술 시 → VATS 고려 가능
- 특정 직업, 재발 최소 → Thoracotomy pleurodesis 고려 해야

안되면 → Autologous blood pleurodesis, EBT

Evidence of Initial managements

NA ≒ ICD < CM or AM

CM (Evidence ↓) vs ICD	LOS ↓, Recurrence ↓, complications ↓
NA (Evidence ↓ ↓) vs ICD	LOS ↓, complications ↓ Recurrence is similar
Chemical pleurodesis vs ICD	LOS is similar Recurrence ↓ Complications ↑ (in tetracycline PL)
Surgery vs ICD	LOS ↓, Recurrence ↓ Cx **(Pneumonia and prolonged air leakage)** ↑

After resolution of 1st episode (no evidence)

Recurrence rate of SP: 13-39%

Current practice in UK ?

Consider surgery after second episode

Elective surgery

- 재발 방지가 중요한 경우 고려 가능
  - 고위험 직업군 (다이버, 파일럿, 군인) 또는 긴장성 기흉
- 재발 위험이 높은 경우 고려 해야
  - Second ipsilateral or first contralateral

Discharge advise

In observation or NA	• Chest X-ray after 2-4 weeks
In AM	• Frequent F/U to monitor complications or remove the tube
For the Flight	• Remnant pneumothorax → No commercial flights until resolution. • Flights permission → After 7 days of complete resolution
In Scuba diving	• 영원히 허락되지 않음. • Surgical pleurectomy시 가능
Smoking cessation	• 반드시!

Evidence of PAL management

수술 안되면 → ABP or EBT

ABP (Autologous blood pleurodesis)	• LOS is shorter than ICD
Bottle suction	• No evidence for beneficial
EBT (Endo Bronchial Therapy)	• may be beneficial

Surgical approach (VATS vs. Thoracotomy)

Prefer Thoracotomy

(very low evidence)

- lower recurrence and further procedures

Prefer VATS

(very low evidence)

- Lower LOS, pain, and complications

Therefore

VATS (일반적인 경우)

Thoracotomy (재발 위험 최소화)

Op timing → 5-7 days of air leakage

indications

긴장성 기흉, 중대한 문제시, 고위험 직업, 동측 재발, 반대측 초발, 양측성 기흉

PAL (5-7 days) or no re-expansion, 임신

Table 5 Evidence review summary for 'What is the optimal surgical approach when performing surgery?'

Clinical outcome	Summary of evidence review (VATS vs thoracotomy) (95% CI)
Length of hospital stay	3.66 days shorter (3.40 to 3.91) with VATS*
Pneumothorax recurrence	Slightly higher with VATS (31/1000 (23 to 41) compared with 15/1000) but low with both surgical techniques*
Need for further treatment	Slightly higher with VATS (59/1000 (37 to 94) compared with 31/1000)*
Complications	Reduced with VATS (99/1000 (88 to 112) compared with 138/1000)*
Pain and breathlessness	Reduced need for postoperative analgesia with VATS†
Duration of air leak	Not reported in any study
Quality of life	Not reported in any study
Mortality	No difference

*Meta-analysis results reported as per 1000 patients.
†Meta-analysis not possible, data reported in different formats.
VATS, video-assisted thoracoscopy surgery.

Surgical Method (Resection vs. Pleurodesis)

- Optimal operation
  - Resection of parenchyma (Stapling과 sealant사용)
  - Surgical pleurodesis (Abrasion, pleurectomy and talc poudrage)
- Resection vs pleurodesis
  - **No differences between methods**
    - For Recurrence, LOS, further treatment, Duration of air leak, complications, and mortality
  - **Surgical pleurodesis (± resection)을 고려 해야.**

vidence review summary for 'What is the opti
orming surgery?'

outcome	Summary of evidence review (bu surgical pleurodesis)
of hospital stay	No overall difference, but inconsiste studies
nothorax recurrence	No difference
for further treatment	No difference
lications	No difference
nd breathlessness	Not enough evidence
n of air leak	No difference
f life	Not reported
	No difference

In specific cases

Pregnancy

- High oxygen consumption → high risk of bullae rupture
- 증상 미미하거나 양이 작으면 경과관찰 하거나, aspiration
- 출산 과정은 기흉 재발과 연관되므로, 가능한 국소/척추 마취

Traumatic or iatrogenic PNX

- 여기서 다루지 않음.

Catamenial pneumothorax

- 미보고율 높음 (25% 보고됨)
- 주로 우측, 자궁내막증 병력 있음.
- Diaphragm, visceral pleura에서 endometrial deposits발견.
- Tx: surgery, hormone, or ovarian rest (in menopause)

Familial pneumothorax

- 10% of PNX
- Birt-Hogg-Dube syndrome, Tuberous sclerosis, LAM, CTD with Marfan or Ehlers-Danlos syndrome

Summary and Comparison

- **BTS guideline (low evidence)**
  - NA ≒ ICD < CM or AM
  - VATS ≤ Thoracotomy
  - Resection ≤ Pleurodesis
  - Discharge advise

SK	유상의료 (전국민 의료 보험)
	짧은 대기 시간, 최신 기술 도입 장려 (행위별 수가제)
	높은 의료 기술과 높은 경쟁력→ 좋은 결과, 자유로운 입원, 단발성 외래
UK	무상의료
	긴 대기 시간, 최신기술 억제
	낮은 의료 기술과 무기력 → 결과 무관, 입원 제한, 다발성 외래

Take home messages

BTS guidelines are tailored to the British.

Discharge advise would be beneficial for Korean patients.

Korean Pneumothorax guidelines that reflets the culture, systems, and patient tendencies are urgently required.