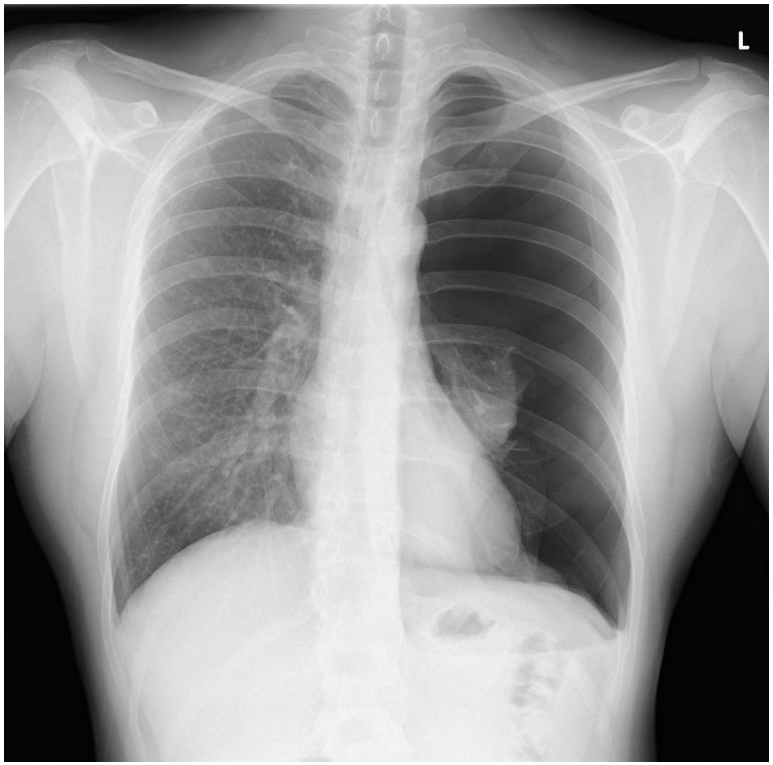
Drenáž hrudníku – aktuální postupy a evidence

Radim Špaček



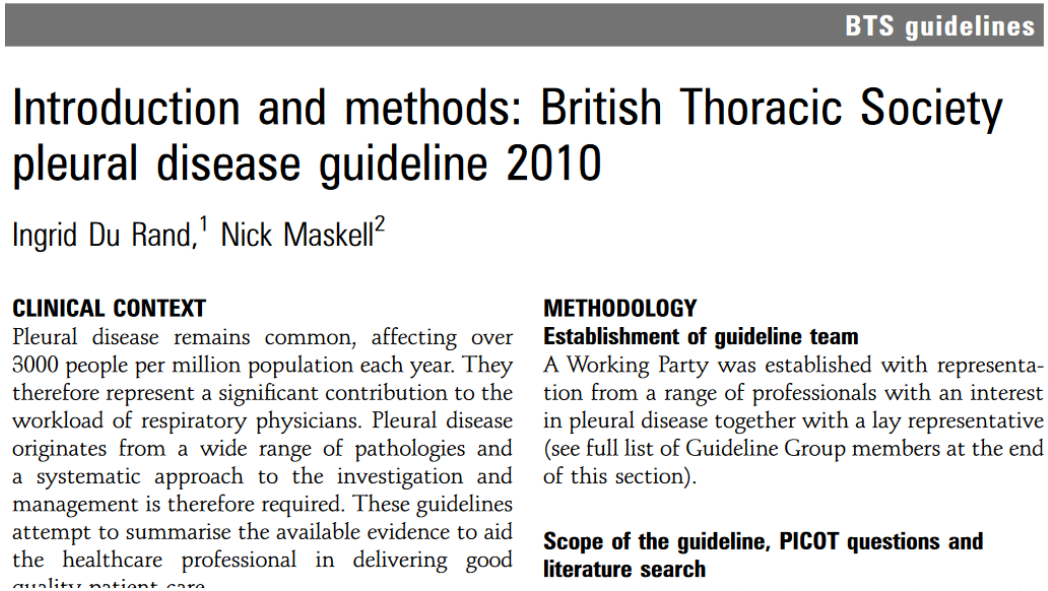
Acute Cardiovascular Care Association

ACCA CERTIFICATION PROGRAMME – LEVEL 2 CERTIFICATION – LOGBOOK TABLE OF COMPETENCIES

Echocardiography		
Endotracheal Intubation	Able to perform independently in routine cases	Level II
Mechanical Ventilation	Able to perform independently in routine cases	Level II
Primary Angioplasty	Some practical experience (50)	Level II
Advanced Extracorporeal Support	Some practical experience (5)	Level II
Thoracic Ultrasound	Some practical experience (20)	Level II
Chest Tube Insertion	Some practical experience (10)	Level II

S čím se na jednotkách kardio-intenzivní péče setkáváme

- Pneumothorax
  - Iatrogenní
  - Spontánní
- Hemothorax
  - Iatrogenní
  - Po KPCR
- Empyém



BTS guidelines

Introduction and methods: British Thoracic Society pleural disease guideline 2010

Ingrid Du Rand,[1] Nick Maskell[2]

CLINICAL CONTEXT

Pleural disease remains common, affecting over 3000 people per million population each year. They therefore represent a significant contribution to the workload of respiratory physicians. Pleural disease originates from a wide range of pathologies and a systematic approach to the investigation and management is therefore required. These guidelines attempt to summarise the available evidence to aid the healthcare professional in delivering good

METHODOLOGY

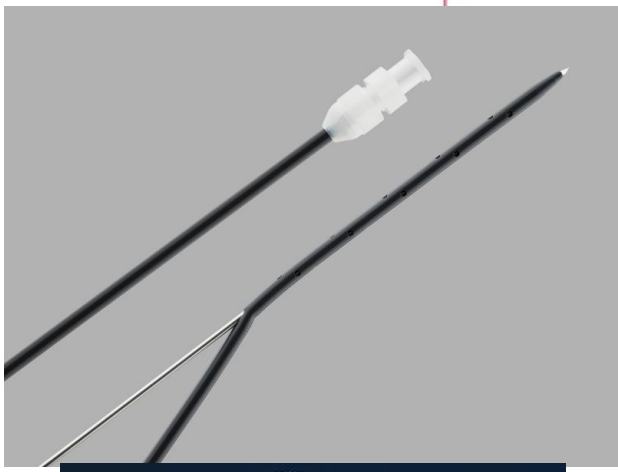
Establishment of guideline team

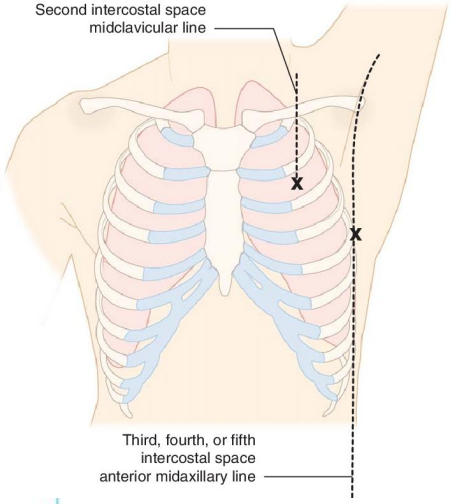
A Working Party was established with representation from a range of professionals with an interest in pleural disease together with a lay representative (see full list of Guideline Group members at the end of this section).

Scope of the guideline, PICOT questions and literature search

https://thorax.bmj.com/content/65/Suppl_2

Obrovská variabilita péče





Pneumothorax

- Čím drénovat?
- Kde drénovat?

Comparison of a large and small-calibre tube drain for managing spontaneous pneumothoraces

Ian J. Benton [a], Grant F.A. Benfield [b,*]

doi:10.1016/j.rmed.2009.04.022

[a] Countess of Chester Hospital NHS Foundation Trust, Chester, Cheshire CH2 1UL, UK
[b] Department of Respiratory Medicine, Ysbyty Gwynedd, Penrhosgarnedd, Bangor, Gwynedd LL57 2PW, UK

Table 4 Influence of drain positioning and pneumothorax size on success or failure to drain a spontaneous pneumothorax.

	SIMSPortex ($n = 24$)				Argyle ($n = 25$)			
	Apex	Fail	Non-apex	Fail	Apex	Fail	Non-apex	Fail
Large	3	0	15	3*	11	0	13	5*
Small	1	0	5	0	—	—	1	0

*$p < 0.05$.

Aktuální evidence -> 2 zásady PNO

- Používat „small-bore caliber“ drény (8-12F)
- Drenážní otvory vždy zavést apikálně/ventrálně

Emergency chest tube placement in trauma care—Which approach is preferable?☆

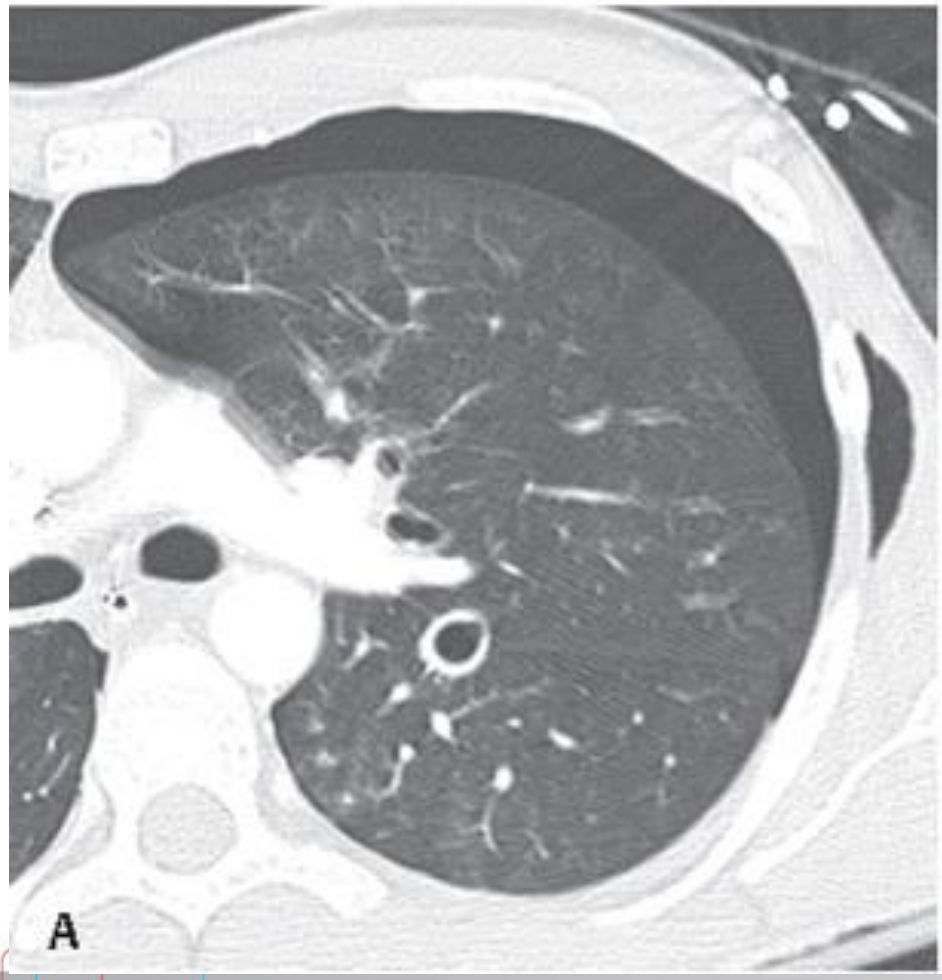
Stefan Huber-Wagner[a,*], Markus Körner[b], Achim Ehrt[a], Mike V. Kay[a], Klaus-Jürgen Pfeifer[b], Wolf Mutschler[a], Karl-Georg Kanz[a]

doi:10.1016/j.resuscitation.2006.06.038

[a] Klinikum der Universität München, Chirurgische Klinik und Poliklinik—Innenstadt, Nussbaumstrasse 20, D-80336 München, Germany

Table 2 Chest tubes placed and rate of malpositioning

	Overall number	Ventral approach	Lateral approach	*p*	RR of ventral approach	NNT of ventral approach
Chest tubes placed	101	21 (20.8%)	80 (79.2%)			
Radiological malposition	22 (21.8%)	2 (9.5%)	20 (25.0%)	0.15*	38.1% (CI 95%: 9.7—150.2%)	6 (CI 95%: 0—383)
Extrathoracic	1 (0.9%)	1 (4.8%)	0	0.42*	n.a.	—
Abdominal	0	0	0	1.00.	n.a.	—
Parenchymal	4.0	1 (4.5%)	3 (3.8%)	0.045*	127.0% (CI 95%: 13.9—1159.4%)	99 (CI 95%: 9—∞)
Interlobal	17 (16.8%)	0	17 (21.3%)	0.013*	n.a.	—
Functional malposition[a]	6 (5.9%)	1 (4.5%)	5 (6.3%)	0.66*	76.2% (CI 95%: 9.4—617.6%)	67 (CI 95%: 8—∞)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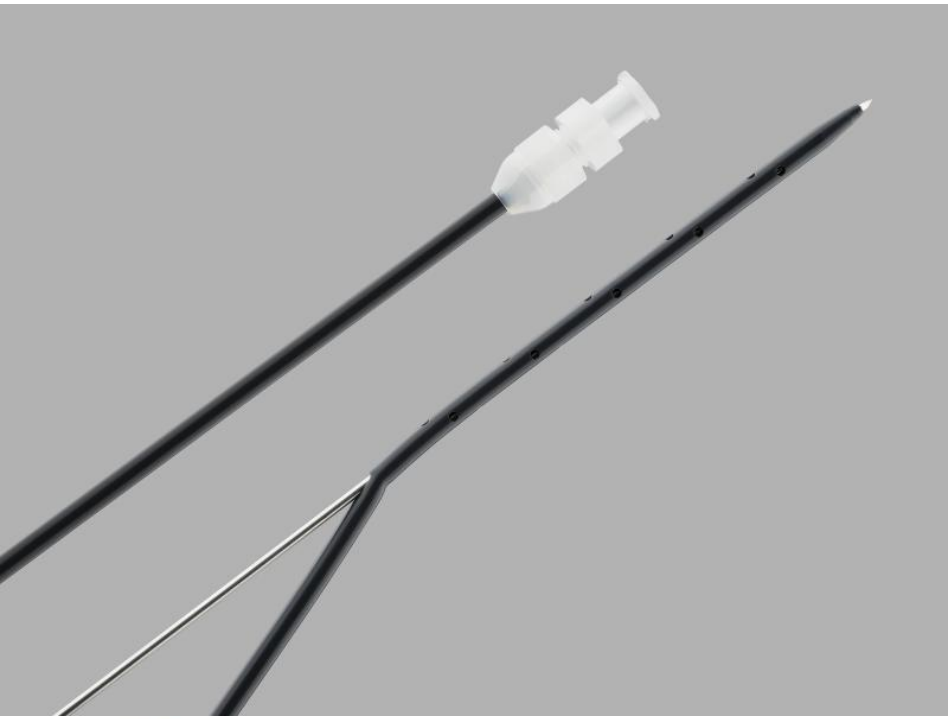
B

Praxe u PNO na našem pracovišti

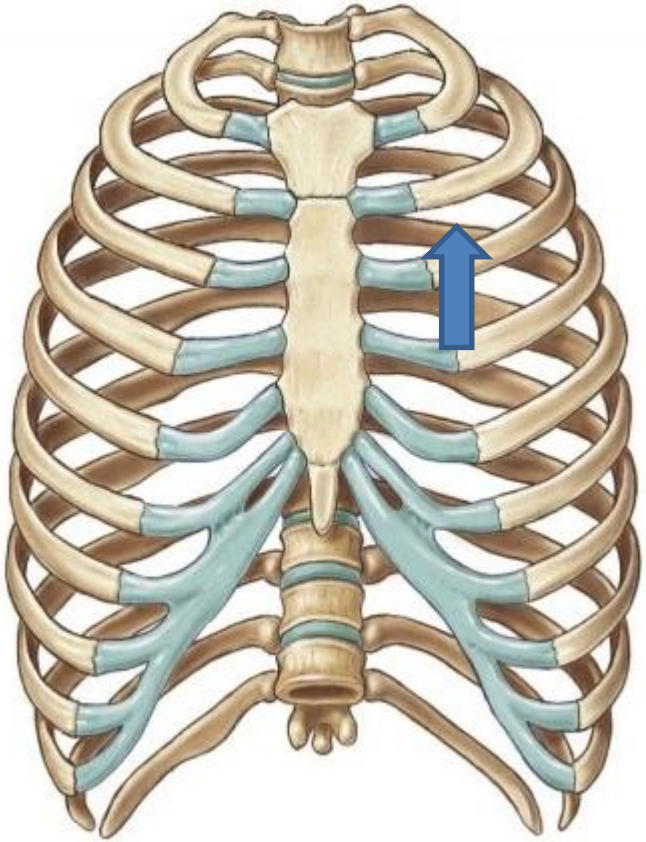
- Drén zavádí kardiolog-intenzivista
- Drén 10F
- Vždy ventrálním přístup - medioklavikulárně

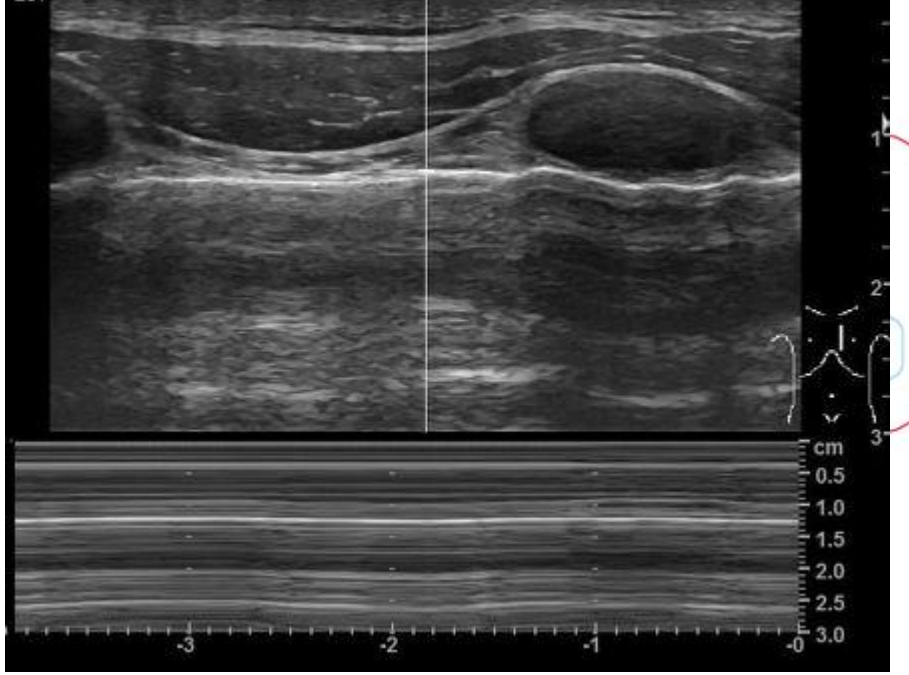
Výběr drénu

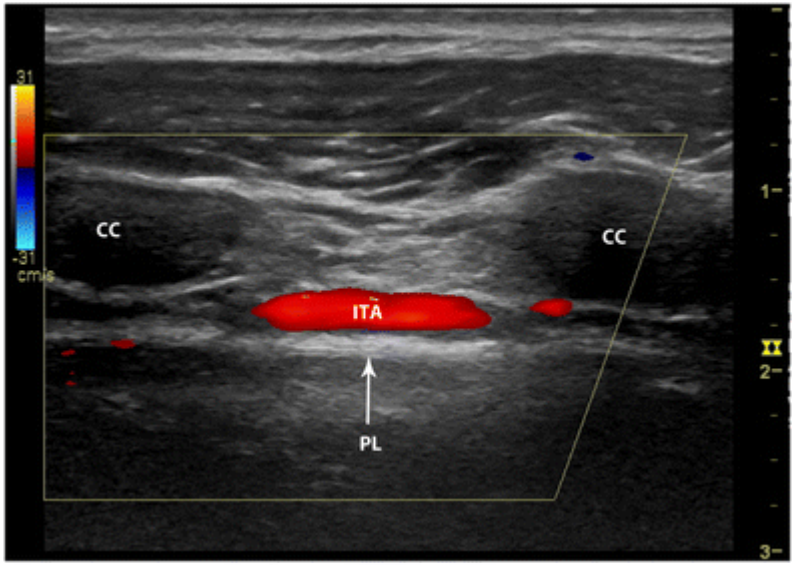


Výběr místa

Výběr místa





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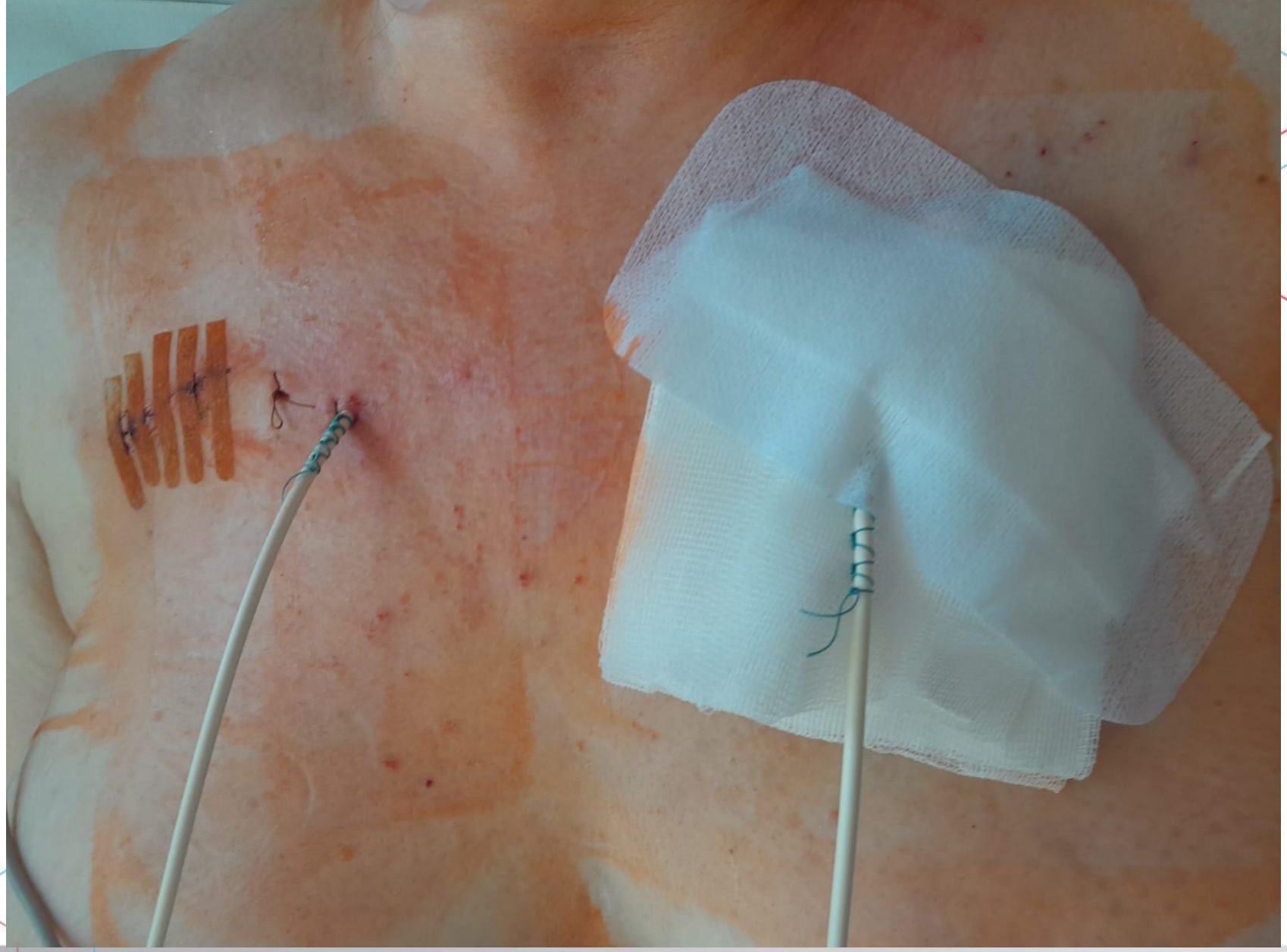
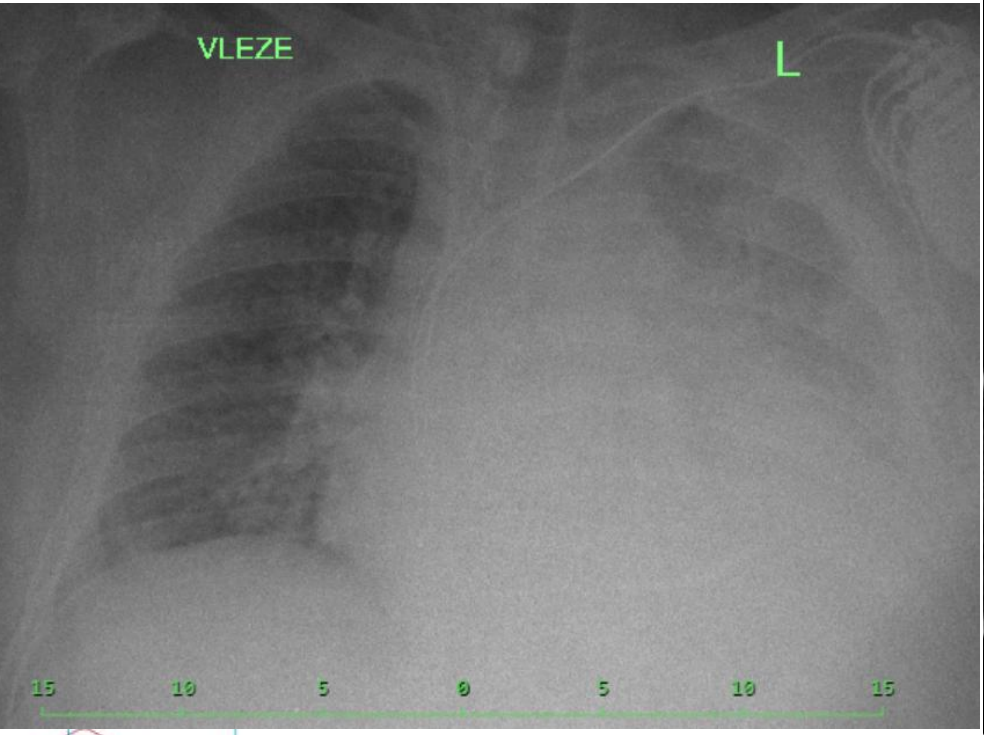
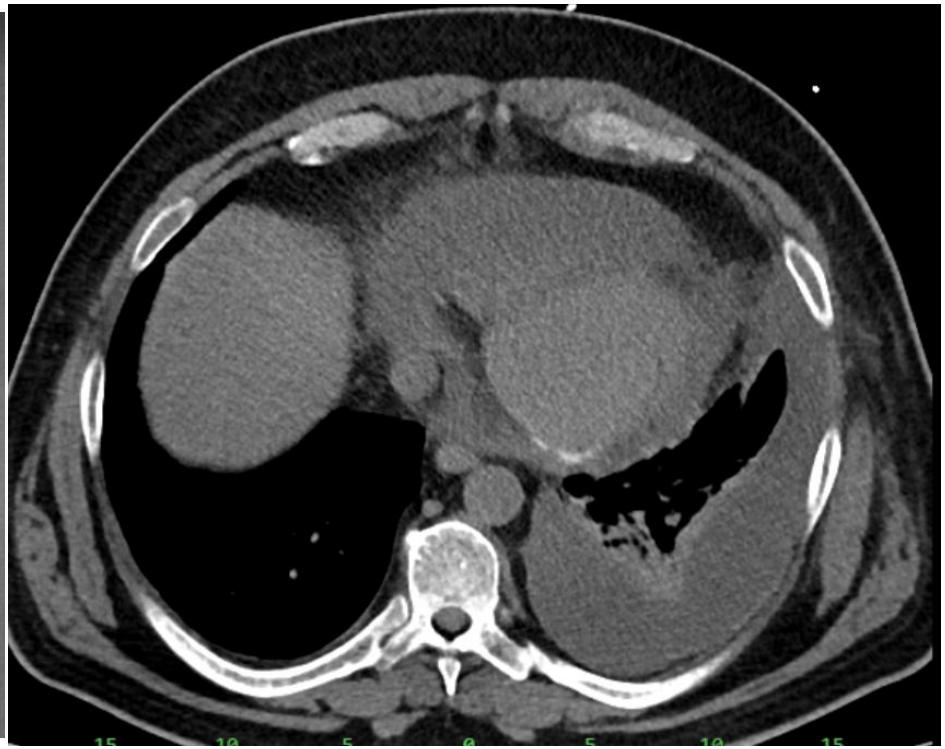


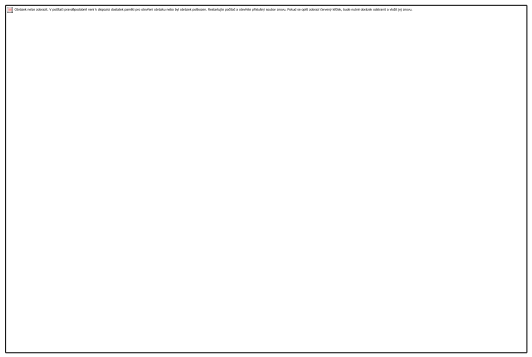
Empyém a hemothorax



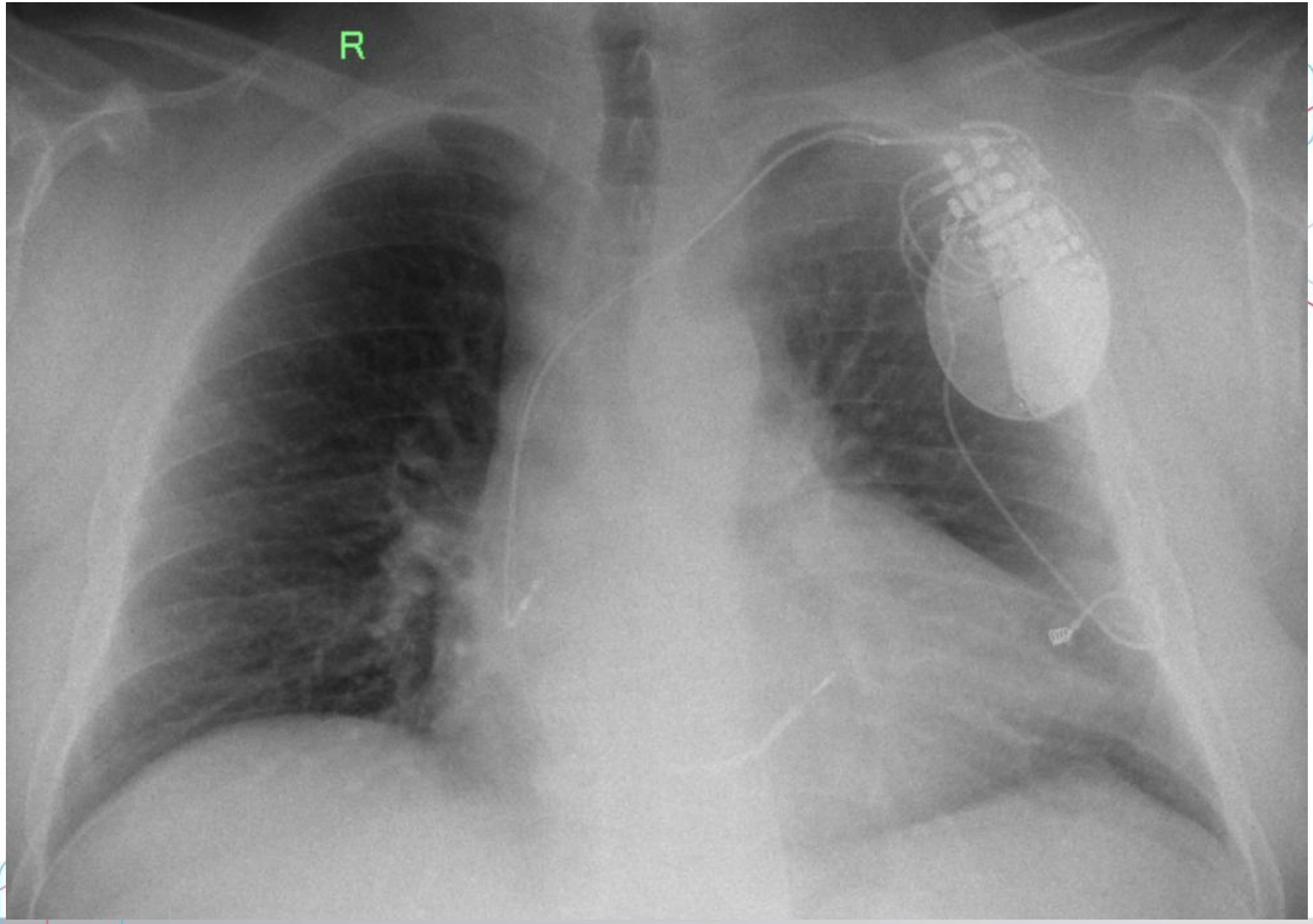


Drenáž hemothoraxu

- UZ -> hyperechogenní septovaný výpotek charakteru hemothoraxu



- Ověřeno probatorní punkcí
- Trokarovou metodou zaveden drén 20F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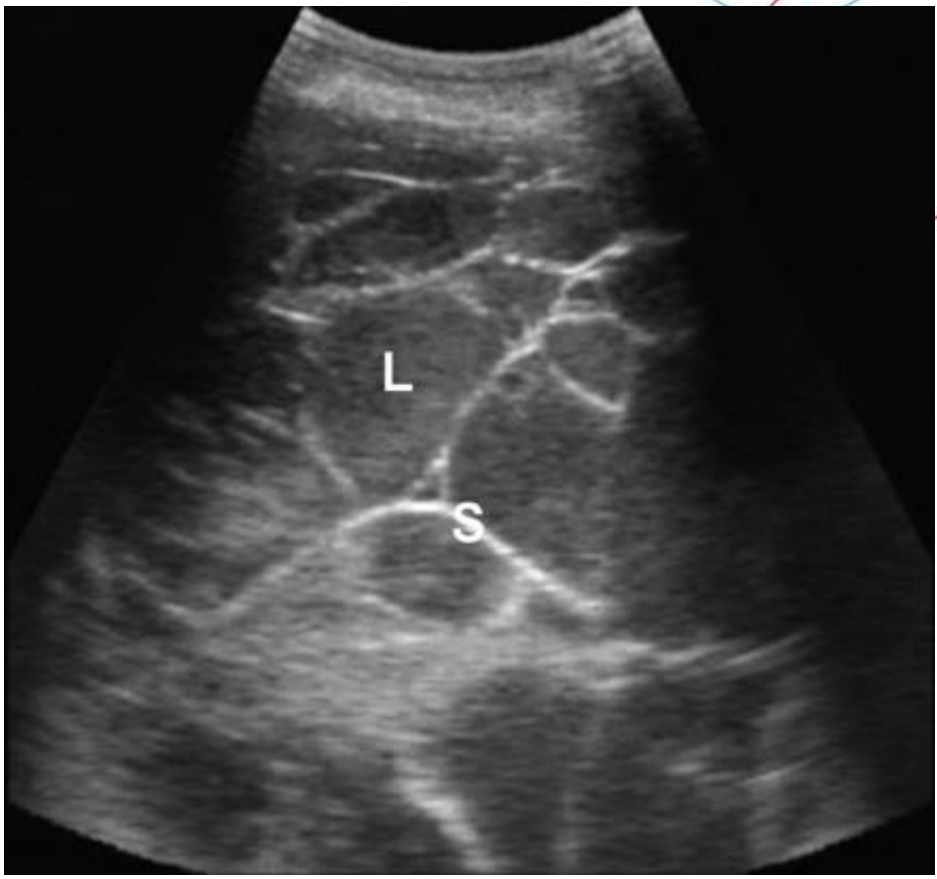
Empyém/Hemothorax - evidence

- U vybraných pacientů možná stačí i tenké drény
- Zatím však trvá konsenzus používat alespoň 16-24F
- Místo drenáže – vždy UZ!!



https://emedicine.medscape.com/article/355524-overview

https://breathe.ersjournals.com/content/9/2/132

The small (14 Fr) percutaneous catheter (P-CAT) versus large (28–32 Fr) open chest tube for traumatic hemothorax: A multicenter randomized clinical trial

Narong Kulvatunyou, MD, Zachary M. Bauman, DO, Savo Bou Zein Edine, MD, Marc de Moya, MD, Casandra Krause, MD, Kaushik Mukherjee, MD, Lynn Gries, MD, Andrew L. Tang, MD, Bellal Joseph, MD, *and* **Peter Rhee, MD**, *Tucson, Arizona*

DOI: 10.1097/TA.0000000000003180

TABLE 3. Comparison of Outcomes

	Pigtail Catheters (n = 56)	Chest Tubes (n = 63)	*p*
Failure rate, n (%)	7 (11)	8 (13)	0.74
Initial output, median (IQR), mL	600 (375–1,037)	400 (250–650)	0.005
24 h	930 (600–1,350)	685 (450–1,000)	0.05
48 h	150 (60–310)	180 (80–300)	0.77
72 h	45 (0–200)	130 (0–272)	0.28
Tube days, median (IQR), d	4 (3–6)	5 (3–7)	0.31
IPE score, median (IQR)	1 (1–2)	3 (2–5)	<0.001
VATS, %	7	5	0.58
Ventilator day, median (IQR)	0 (0–2)	0 (0–0)	0.13
ICU day, median (IQR)	2.5 (0–3.5)	2 (0–4)	0.28
Hospital length of stay, median (IQR), d	8.5 (5.5–15)	8 (5–12)	0.30

1. It was okay, I can tolerate it, I can do it again.
2. It was okay, but I do not want to go through this again.
3. It was a bad experience for me.
4. It was a worse experience for me.
5. It was the worst experience of my life!

Take home messages

- Hrudní drenáž by měla patřit do portfolia kardio-intenzivisty
- V posledních 10 letech příklon k miniinvazivním postupům, především u PNO
- „Než něco strčím do hrudníku, vezmu UZ sondu“

Děkuji Vám za pozornost!