



Hip fracture and NIV: a challenging case

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INTRODUCTION

- Proximal femur fracture in the elderly patient represents today one of the major health problems in developed countries with considerable impact in terms of economy and morbidity.

HISTORY

- Overlap syndrome (COBP), NIV h24 7/7; aortic valve bioprosthesis; dualchamber PM, chronic AFib with NOACs; hypertension, duodenal ulcers, obesity, CKD.

THERAPY

- Apixaban; Pantoprazole; Losartan; Allopurinol; Furosemide; Tiotropium bromide; Beclomethasone+Formoterol.

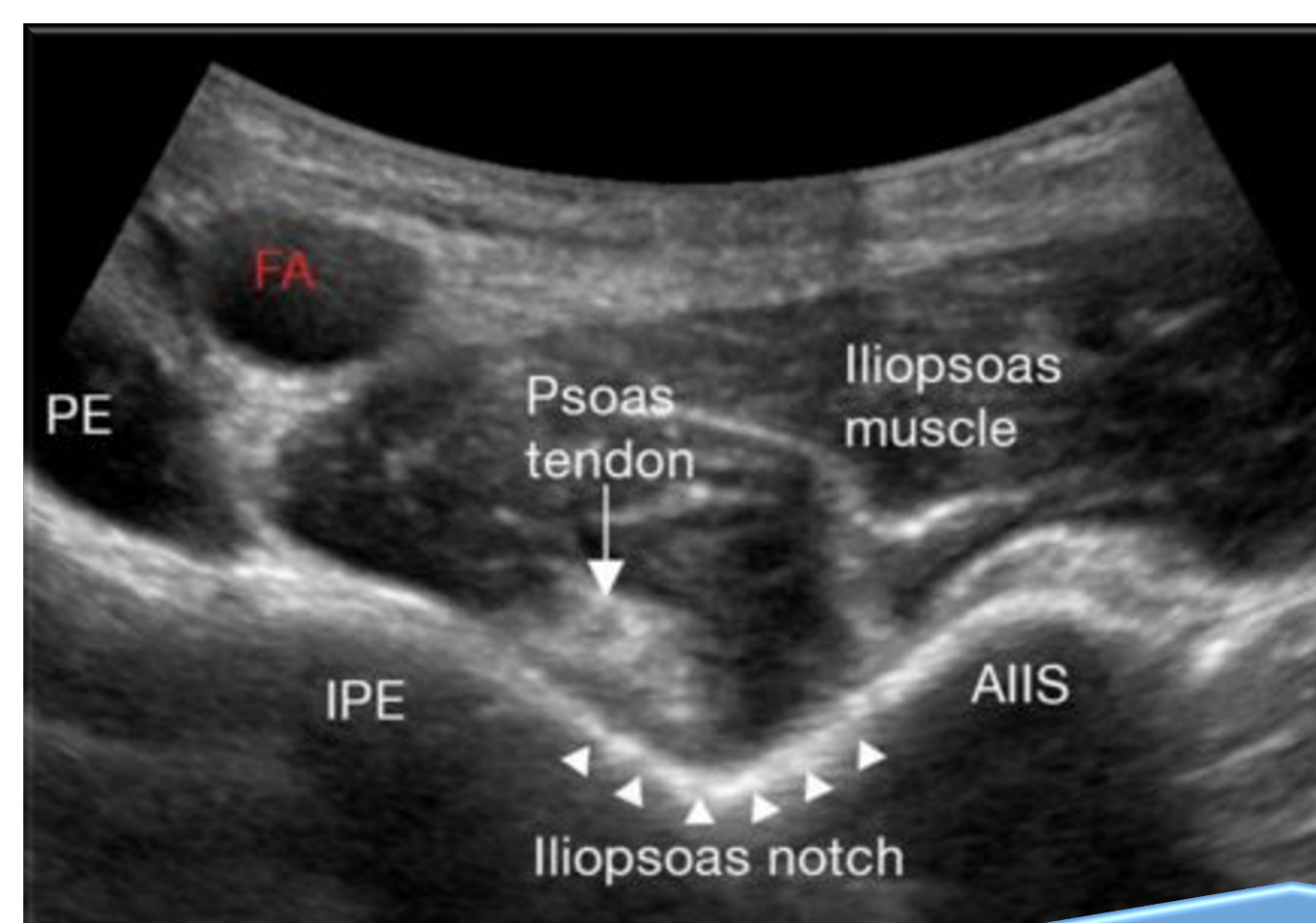
CLINICAL SETTINGS

Pre-operative tests:

- Hb 8,6 gr/dl; PLT 306.000; INR 1,61; aPTT 38.
- EGA: pH 7,37; pO₂ 62 mmHg; pCO₂ 57 mmHg; HCO₃- 34 mmol/l; SpO₂ 92%; Lac 1,5.
- NHYA 3; METs<4; NHFs 7.

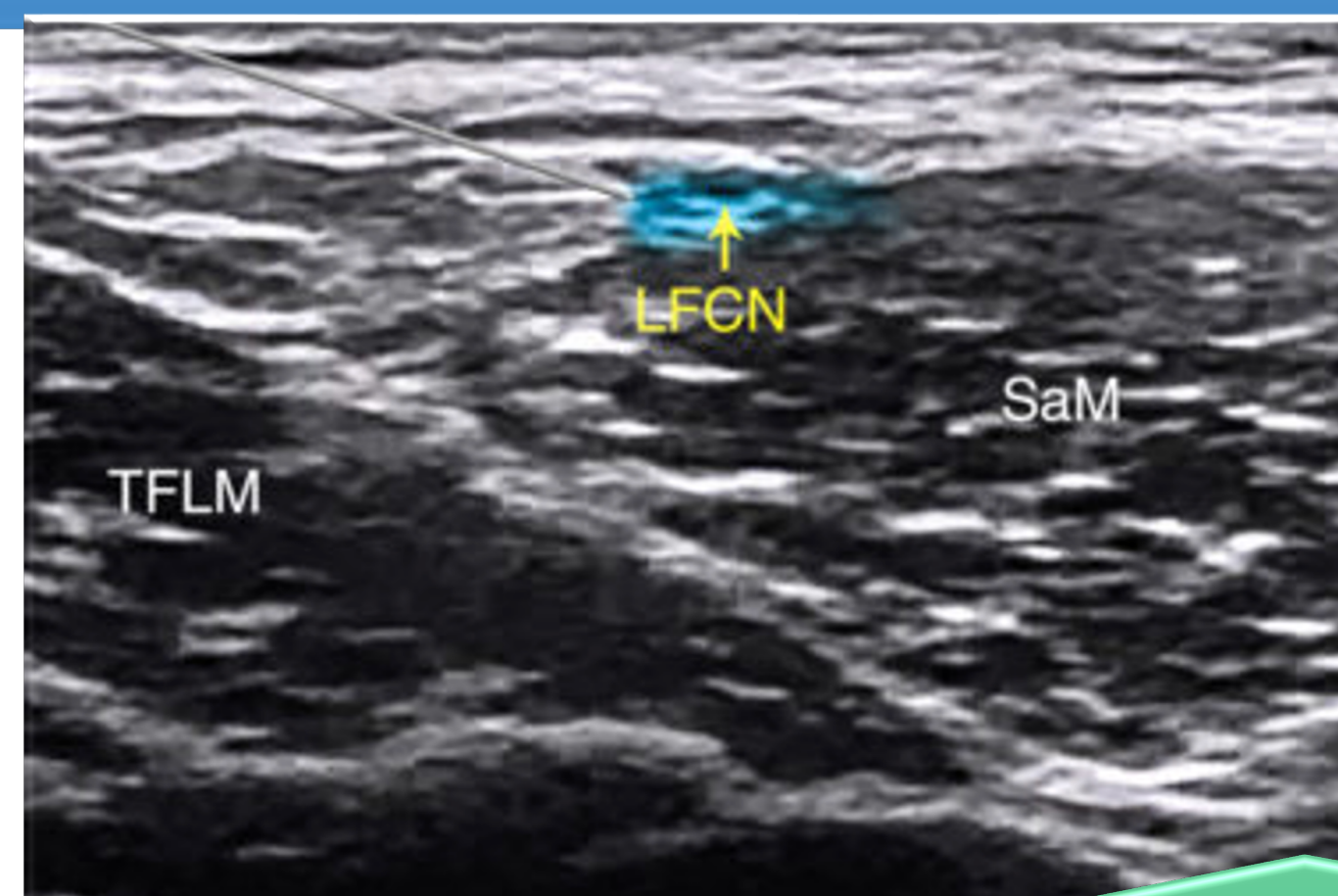
CASE REPORT

- The patient arrives in the OR, in a non-deferrable emergency with negative neurological objectivity, with antalgic semi-sitting position conditioned by the respiratory failure, supported by NIV (PS 8 cmH₂O, PEEP 6 cmH₂O, FiO₂ 35%). Locoregional anesthesia is chosen because of **severe hypoxemic hypercapnic respiratory failure** and **altered coagulative status**. In the OR, after monitoring (ECG, SpO₂, NIBP, diuresis, ETCO₂ provided by the patient's portable ventilator), is performed, in asepsis, PENG block US-guided, femoral and lateral femoro-cutaneous nerve blocks; using **Ropivacaine 0.375%** total volume **35 ml+4 mg Dexamethasone**. Surgery lasted 45 minutes, with hemodynamic and respiratory stability without additional sedation or analgesia. Postoperative monitoring in PACU showed stability of cardio-respiratory parameters, **VAS < 4** and **NRS 3** scales and no onset of delirium. No need for additional analgesia in the first 24 hours is required. After 48 hours Paracetamol 1g every 6/8 hours was administered with good pain control.



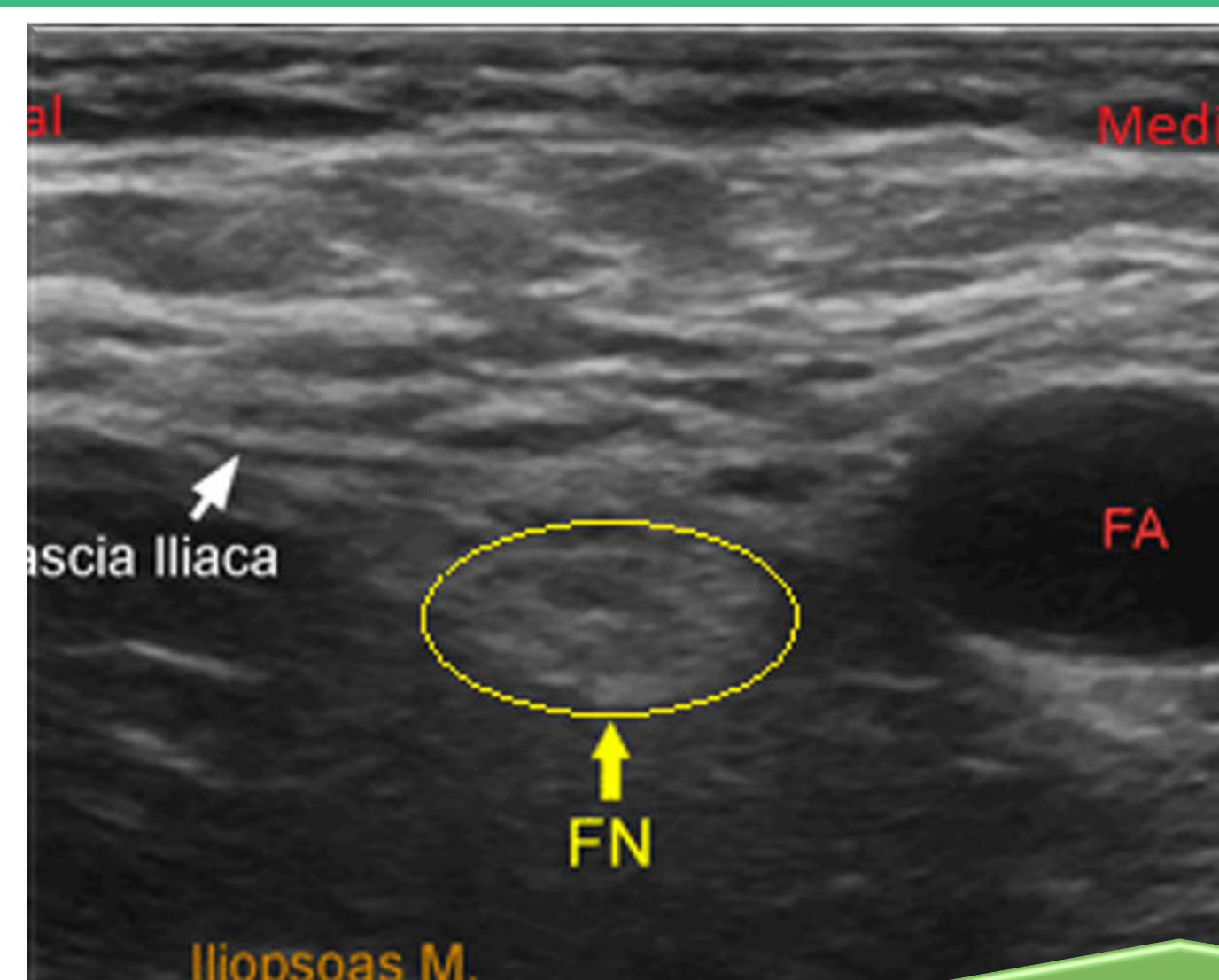
PENG BLOCK

- Insert the needle in-plane from lateral to medial through the iliopsoas muscle toward the plane between the psoas tendon and bone.
- LA: Ropivacaine 0,375% 25 mL



LATERAL FEMORAL CUTANEOUS NERVE BLOCK

- Insert the needle in plane in a lateral to medial orientation to enter the plane between TFLM and SaM.
- LA: Ropivacaine 0,375% 5 ml



FEMORAL NERVE BLOCK

- Insert the needle in-plane in a lateral to medial orientation and advanced toward the nerve.
- LA: Ropivacaine 0,375% 10 mL

CONCLUSION

The anesthesiological choice allowed:

- to perform surgery as soon as possible (as recommended, ERAS protocols-BPC Siaarti),
- to make it possible to avoid ICU, onset of delirium;
- to provided an excellent analgesic control without parenteral drugs.

BIBLIOGRAPHY

- Behr A.U., Facchin F., Degoli M., Corcioni A. La gestione anestesiológica della frattura di femore nel paziente anziano. Buone pratiche cliniche SIAARTI
- Lin DY, Morrison C, Brown B, Saies AA, Pawar R, Vermeulen M, Anderson SR, Lee TS, Doornberg J, Kroon HM, Jaarsma RL. Pericapsular nerve group (PENG) block provides improved short-term analgesia compared with the femoral nerve block in hip fracture surgery: a single-center double-blinded randomized comparative trial. Reg Anesth Pain Med. 2021;46(5):398-403
- Del Buono R, Padua E, Pascarella G, Costa F, Tognù A, Terranova G, Greco F, Fajardo Perez M, Barbara E. Pericapsular nerve group block: an overview. Minerva Anestesiol. 2021 Apr;87(4):458-46
- Guay J, Parker MJ, Griffiths R, Kopp S. Peripheral nerve blocks for hip fractures. Cochrane Database of Systematic Reviews 2017, Issue 5. Art. No.: CD001159.
- Ballard C, Jones E, Gauge N, Aarsland D, Nilsen OB, Saxby BK, Lowery D, Corbett A, Wesnes K, Katsaiti E, Arden J, Amoako D, Prophet N, Purushothaman B, Green D. Optimised anaesthesia to reduce post operative cognitive decline (POCD) in older patients undergoing elective surgery, a randomised controlled trial. PLoS One. 2012;7(6):e37410.)
- Images: <https://www.nysora.com>