PALERMO 5-7 Ottobre
XXVIII CONGRESSO NAZIONALE

European Society of Regional Anaesthesia & Pain Therapy
ESRA ITALIA

PITFALLS AND RISKS IN SPINE SURGERY

Alessandro Ricci
SC Anestesia -Istituto Ortopedico Rizzoli
Dir.: Dr.ssa L.De Pietri

SERVIZIO SANITARIO REGIONALE
EMILIA - ROMAGNA
Istituto Ortopedico Rizzoli di Bologna
Istituto di Ricovero e Cura a Carattere Scientifico

PITFALL

Place or something that is potentially dangerous

RISK

The possibility of something negative happening, such as damage or an undesirable event.

WHAT IS DANGEROUS IN THE SPINE SURGERY?

1- DEFORMITIES (Scoliosis)

A-Idiopathic

B-Neuromuscolar –Syndromic

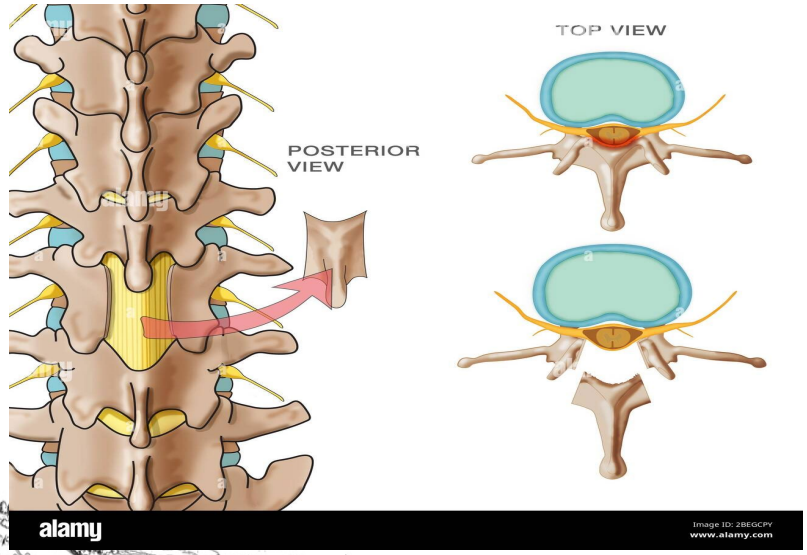
2-DEGENERATIVE

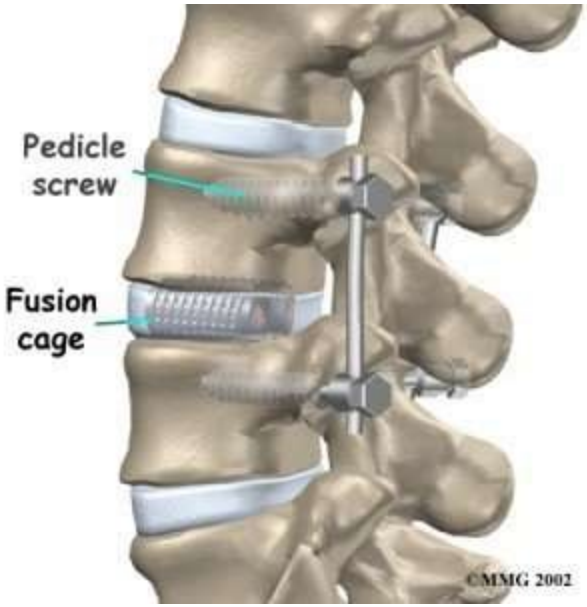
3-NEOPLASMS

4-TRAUMA

COMMON SURGICAL TECHNIQUES

- CORRECTIONS
- DECOMPRESSIONS AND STABILISATIONS
- FUSION (cage, XLIF, ALIF, PLIF)
- VERTEBRECTOMIE





WHERE THE MAIN PITFALLS ARISE?

- ->90% PRONE
- SPINAL CORD–DURA –ROOTS- NERVES
- 90% IMPROVEMENT SURGERY

WHY ARE THEY PITFALLS?

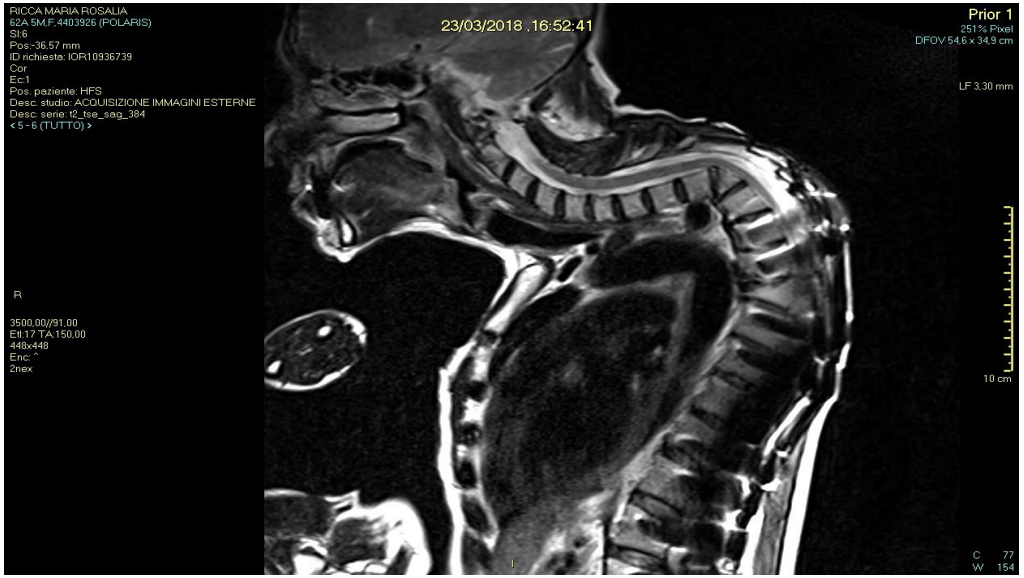
- Because unfortunately in the evaluation of complications (in particular neurological ones) also the anesthesiological conduction is IMPLIED.

What worries me most? What do I think about before I perform a SS?

INTRAOP

- IOT
- POSITIONING (!!!)
- VENTILATION
- HEMODYNAMICS
- DURAL INJURY
- SSEP AND MEP ALTERATION
- BLOOD LOSS
- POSITION CHANGES

IOT HARD!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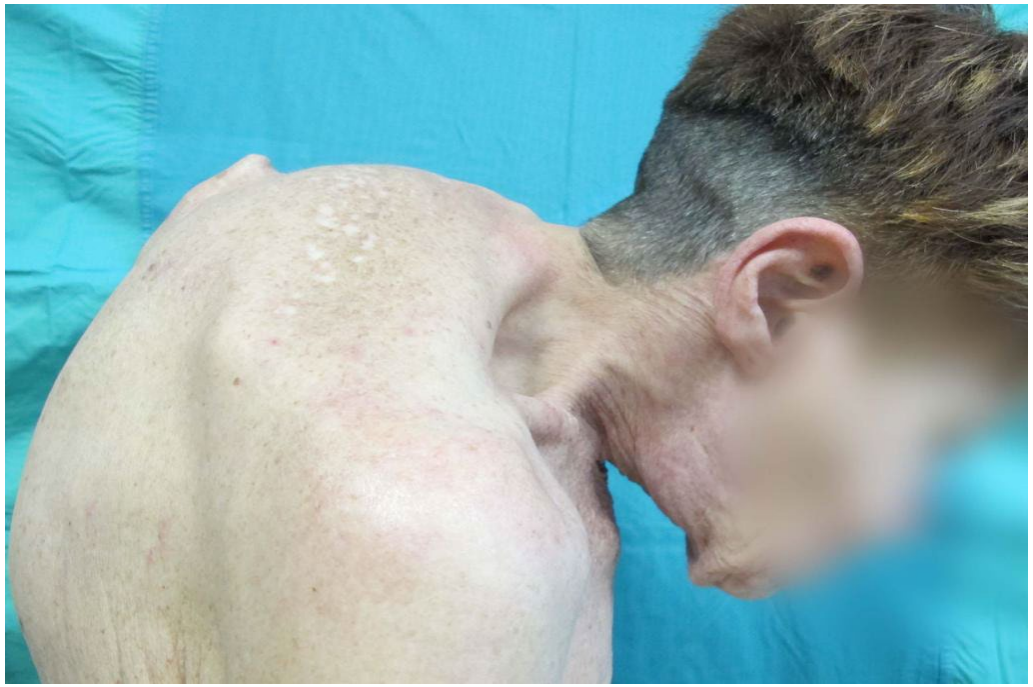
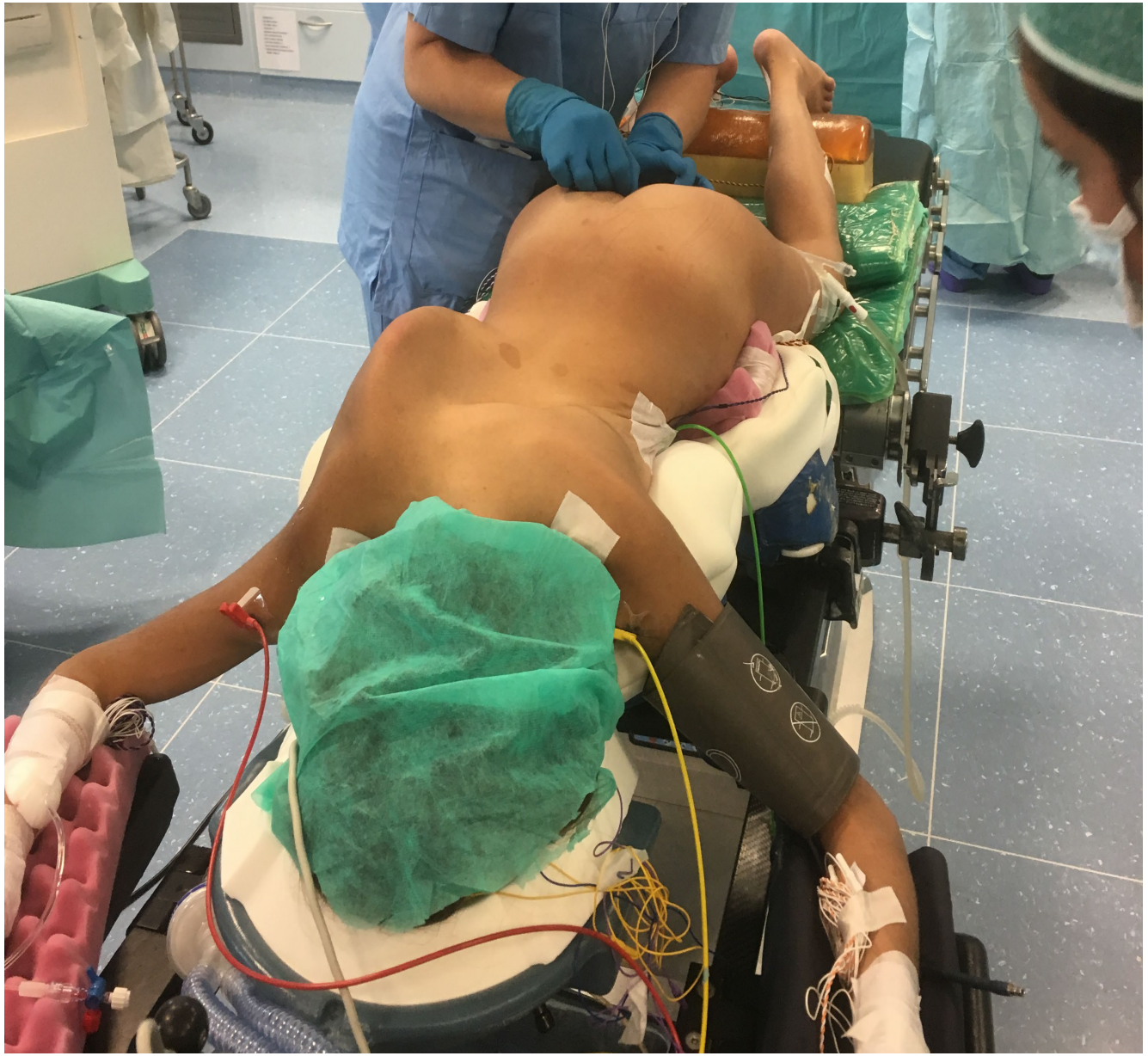
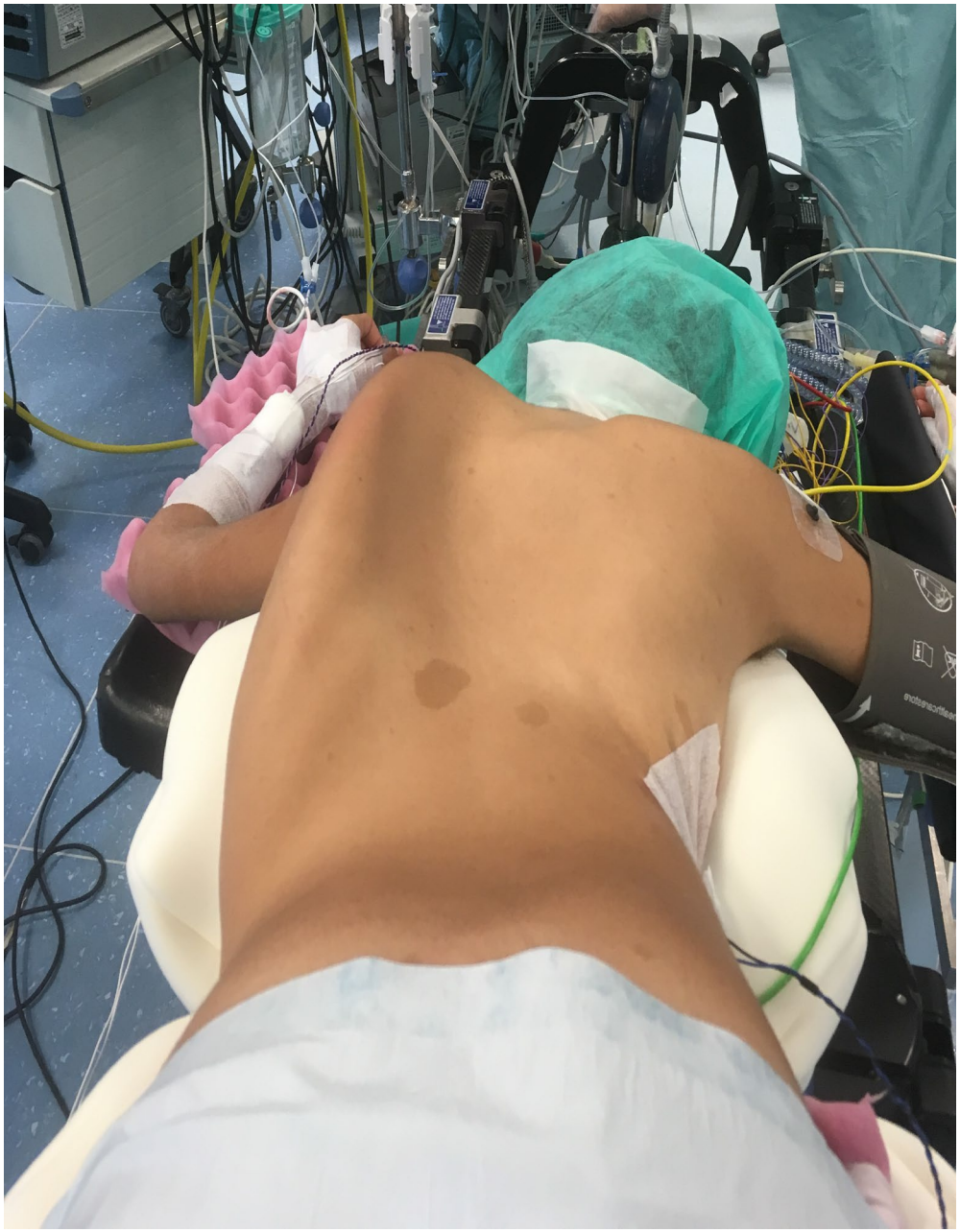
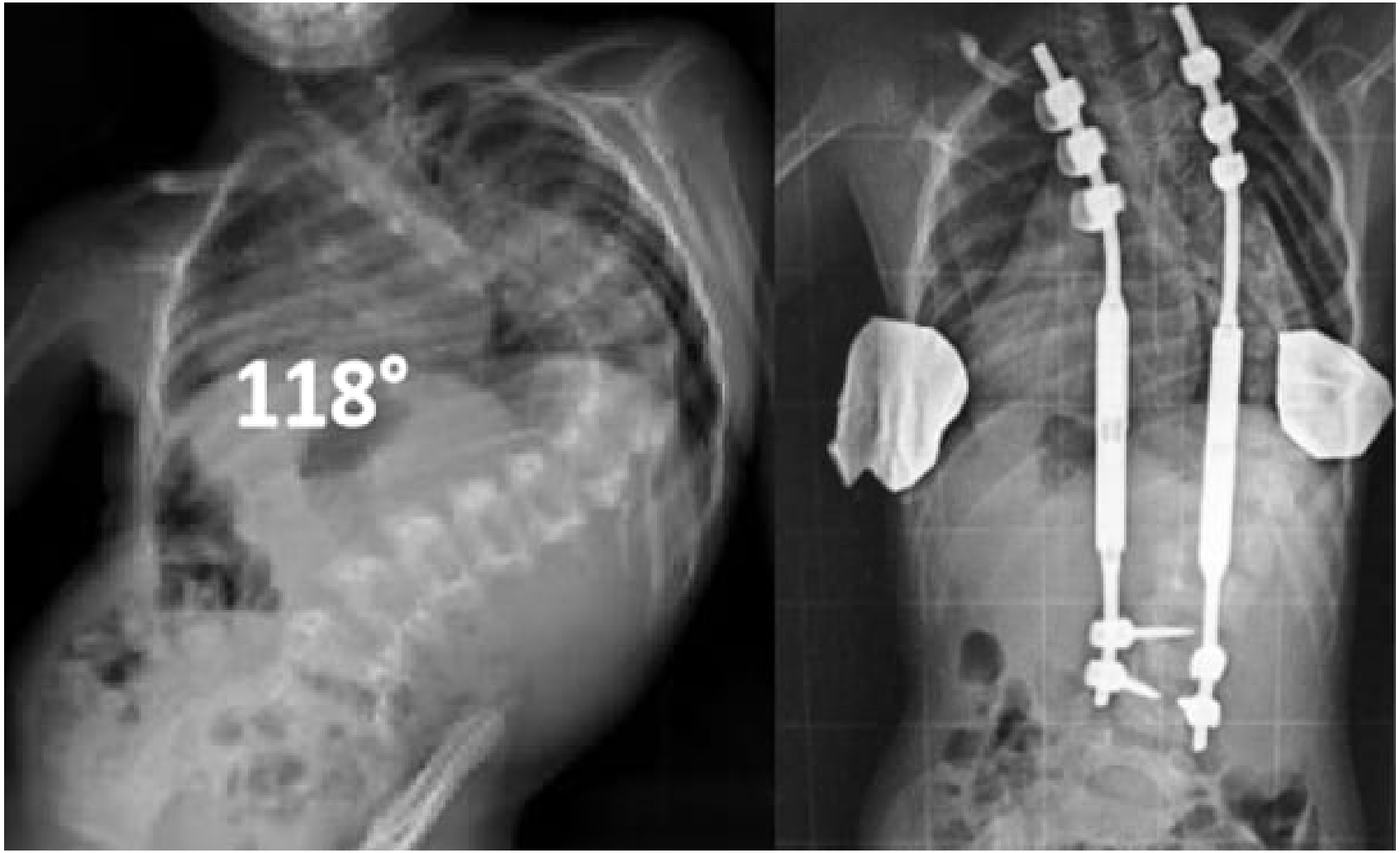


- Prader Willy Syndrome

Infantile Cerebral Palsy



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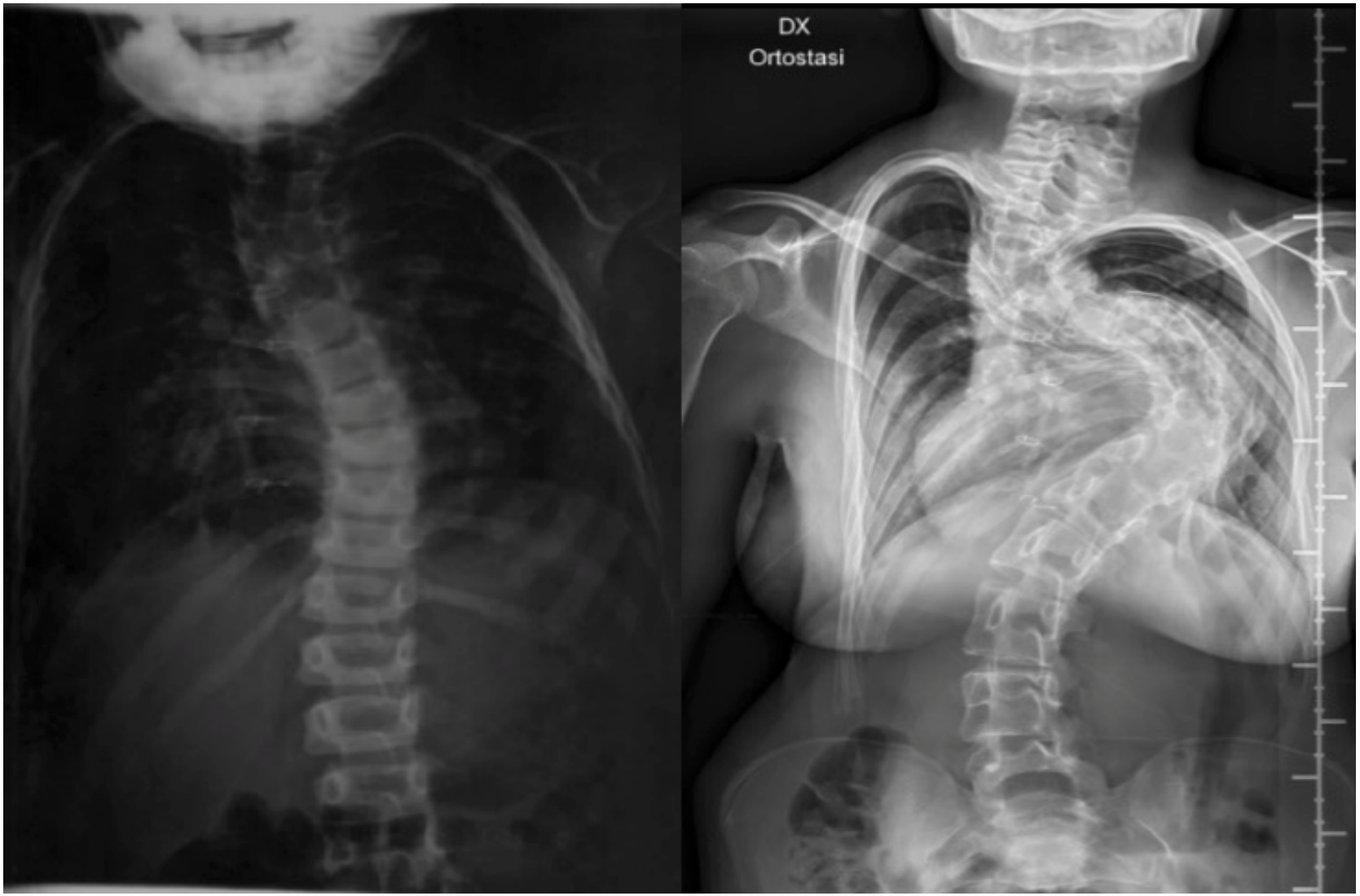
Duchenne's Muscular Dystrophy


DX
Ortostasi

Transfusion Medicine, 2008, **18**, 209–210 doi: 10.1111/j.1365-3148.2008.00872.x

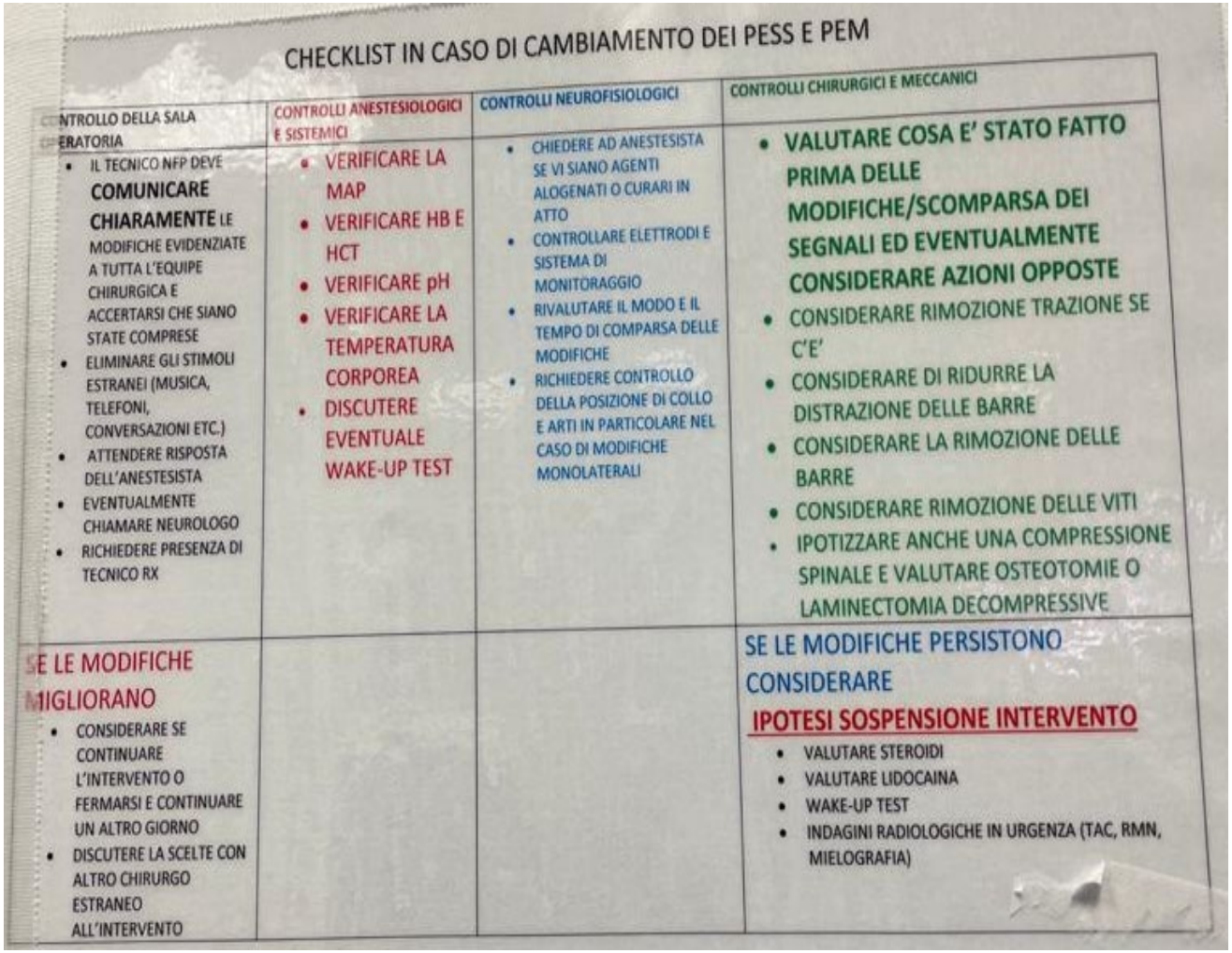
EDITORIAL

Intraoperative transfusion, triggers and precision – an oxymoron

N. Soni *Magill Department of Anaesthesia, Chelsea and Westminster Hospital, London SW10 9NH, UK*

ASA1: 7g/dl **ASA2: 8g/dl** **ASA3: 9g/dl**

Neurophysiological monitoring, Examples of intraoperative flow chart application.



CHECKLIST IN CASO DI CAMBIAMENTO DEI PESS E PEM

NTROLLO DELLA SALA ERATORIA	CONTROLLI ANESTESIOLOGICI E SISTEMICI	CONTROLLI NEUROFISIOLOGICI	CONTROLLI CHIRURGICI E MECCANICI
• IL TECNICO NFP DEVE **COMUNICARE CHIARAMENTE** LE MODIFICHE EVIDENZIATE A TUTTA L'EQUIPE CHIRURGICA E ACCERTARSI CHE SIANO STATE COMPRESE • ELIMINARE GLI STIMOLI ESTRANEI (MUSICA, TELEFONI, CONVERSAZIONI ETC.) • ATTENDERE RISPOSTA DELL'ANESTESISTA • EVENTUALMENTE CHIAMARE NEUROLOGO • RICHIEDERE PRESENZA DI TECNICO RX	• VERIFICARE LA MAP • VERIFICARE HB E HCT • VERIFICARE pH • VERIFICARE LA TEMPERATURA CORPOREA • DISCUTERE EVENTUALE WAKE-UP TEST	• CHIEDERE AD ANESTESISTA SE VI SIANO AGENTI ALOGENATI O CURARI IN ATTO • CONTROLLARE ELETTRODI E SISTEMA DI MONITORAGGIO • RIVALUTARE IL MODO E IL TEMPO DI COMPARSA DELLE MODIFICHE • RICHIEDERE CONTROLLO DELLA POSIZIONE DI COLLO E ARTI IN PARTICOLARE NEL CASO DI MODIFICHE MONOLATERALI	• **VALUTARE COSA E' STATO FATTO PRIMA DELLE MODIFICHE/SCOMPARSA DEI SEGNALI ED EVENTUALMENTE CONSIDERARE AZIONI OPPOSTE** • CONSIDERARE RIMOZIONE TRAZIONE SE C'E' • CONSIDERARE DI RIDURRE LA DISTRAZIONE DELLE BARRE • CONSIDERARE LA RIMOZIONE DELLE BARRE • CONSIDERARE RIMOZIONE DELLE VITI • IPOTIZZARE ANCHE UNA COMPRESSIONE SPINALE E VALUTARE OSTEOTOMIE O LAMINECTOMIA DECOMPRESSIVE
E LE MODIFICHE MIGLIORANO • CONSIDERARE SE CONTINUARE L'INTERVENTO O FERMARSI E CONTINUARE UN ALTRO GIORNO • DISCUTERE LA SCELTE CON ALTRO CHIRURGO ESTRANEO ALL'INTERVENTO			SE LE MODIFICHE PERSISTONO CONSIDERARE **IPOTESI SOSPENSIONE INTERVENTO** • VALUTARE STEROIDI • VALUTARE LIDOCAINA • WAKE-UP TEST • INDAGINI RADIOLOGICHE IN URGENZA (TAC, RMN, MIELOGRAFIA)

Changes intraoperatative PESS/PEM

Of anesthesiological competence

1. Evaluating AMP(>65 mmHg?)
2. Evaluate Hb
3. Assess position
4. Assessing anaesthetic depth (BIS-EEG)
5. Assess body temperature
6. Evaluate Ph

RELATE ALOUD TO THE TEAM AND MAKE SURE EVERYONE HEARS AND UNDERSTANDS!!

. PITFALLS - RISKS

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- COMPLICATIONS

COMORBIDITIES

- BMI ++
- HYPERTENSION - CIC
- DIABETES
- HEPATOPATHIES
- NEUROPATHIES
- USE OF ANTICOAGULANTS/ANTIPLATELET
- RESTRICTIVE/OBSTRUCTIVE SYNDROMES

DEFORMITA' NELL'ADOLESCENTE

PERIOPERATORIE	COMUNI	ILEO PARALITICO
	RARE	LESIONI NEUROLOGICHE (<1%) RADICI NERVOSE CAUDA EQUINA MIDOLLO SPINALE DOLORE COMPLICANZE MEDICHE GASTROINTESTINALI POLMONARI RENALI
POSTOPERATORIE	COMUNI	PJK (17-39%) INFEZIONI (0-10%)
	RARE	PSEUDOARTROSI (1%) PROGRESSIONE DELLA CURVA (1%) CRANKSHAFT PHENOMENON (<1%) FLATBACK DEFORMITY (<1%) MOBILIZZAZIONE MDS 0,44%

NEUROLOGICAL COMPLICATIONS

DEFICIT CHARGED BY
-NERVOUS ROOTS
-CAUDA EQUINA
-SPINAL CORD

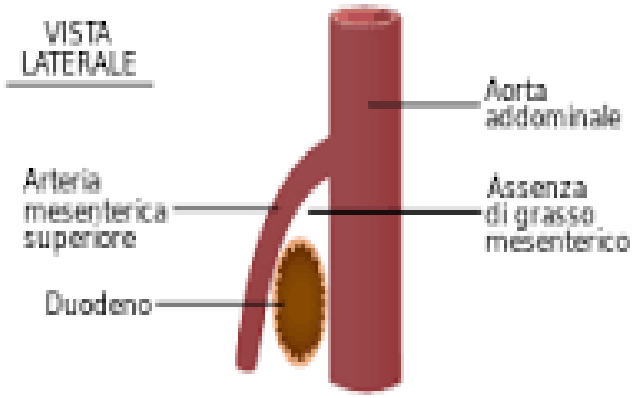
PER COMPRESSIONE ESTRINSECA DA IMPIANTO, EMATOMA, ASCESSI
DIRETTA LESIONE IATROGENA
DISTRAZIONE DEL MIDOLLO SPINALE O DELLE RADICI SPINALI DURANTE MANOVRE CORRETTIVE
LESIONI VASCOLARI CON SUCCESSIVA ISCHEMIA DI MIDOLLO O RADICI NERVOSE

- RARE!!! < 1%

GASTROINTESTINAL COMPLICATIONS 3,6%

- ILEO adattamento dell'innervazione peritoneale posteriore dopo la correzione
- SMA sindrome dell'arteria mesenterica superiore

  terza parte del duodeno compressa fra arteria mesenterica superiore e aorta (vomito biliare e ileo prolungato
- PANCREATITIS
- CHOLECYSTITIS



WHAT IS THE AVERAGE INCIDENCE OF COMPLICATIONS IN DEGENERATIVE VERTEBRAL SURGERY?

a) 5-10%

b) 15-25%

a) 40-50%

b) 65-75%

a) 5-10%
b) 15-25%
c) 40-50%
d) 65-75%

HOW MANY SPINE DEPARTMENT IN ITALY ARE AWARE OF THE COMPLICATION RATE IN THEIR DEPARTMENT?

HOW TO REDUCE COMPLICATIONS IN SPINAL SURGERY

- TECHNICAL SKILLS
  - Surgical and anaesthesiological education
  - Surgical and anaestesiological technique
  - Surgical and anaesthesiological experience
  - Tips and Tricks
  - mitigation of patient risk factors
  - Technology
  - Etc…

Main target.....

RAPID
POSTOPERATIVE
MOBILIZATION

THEY NEED HELP!!!

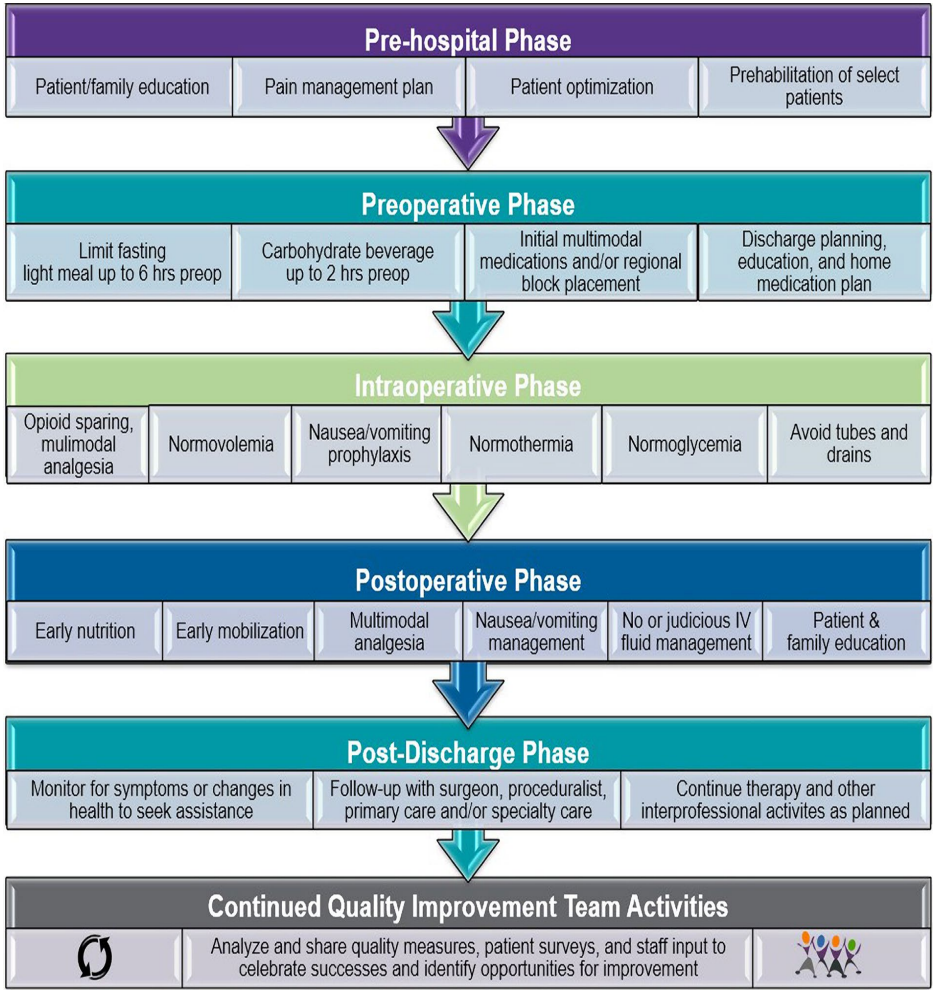
HOW TO REDUCE COMPLICATIONS IN SPINAL SURGERY

BEFORE SURGERY ……

DURING SURGERY ……

AFTER SURGERY …..

POST-OPERATIVE PERIOD: ERAS



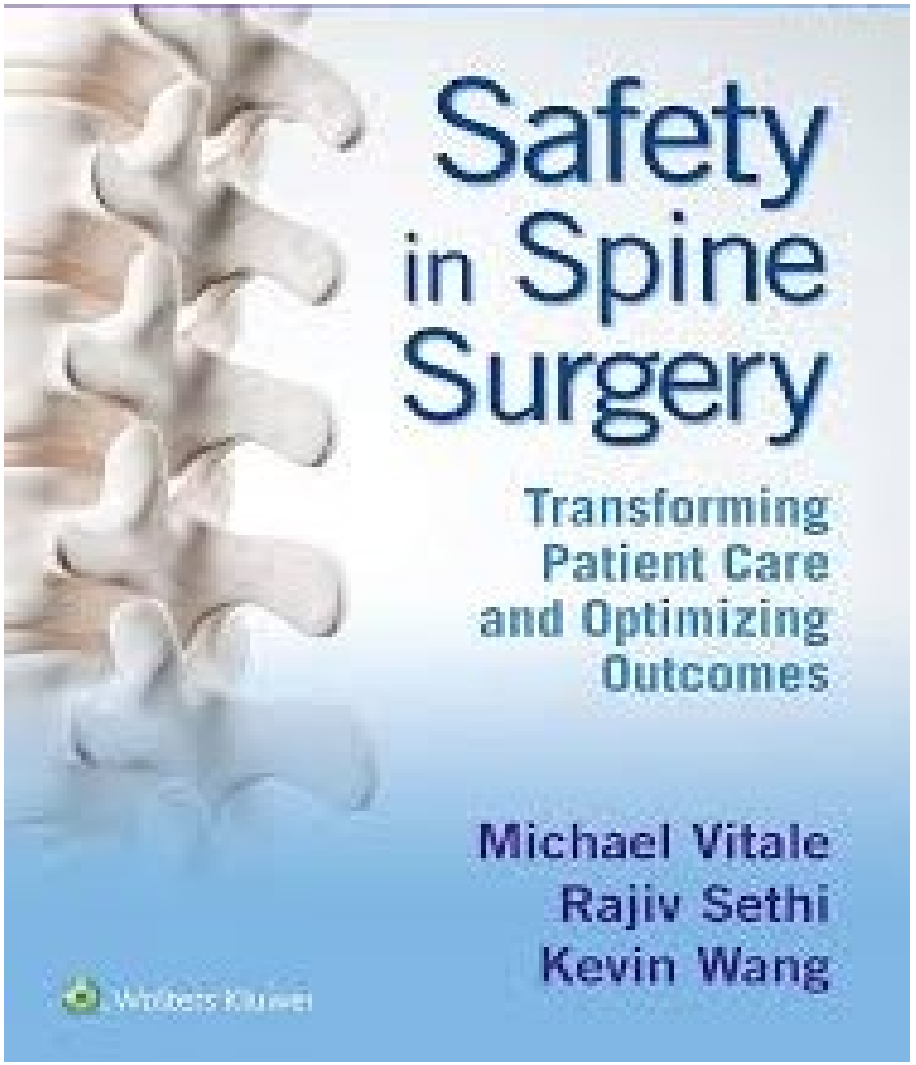
Elsarrag M et al. Enhanced recovery after spine surgery: a systematic review. Neurosurg Focus. 2019 Apr 1;46(4):E3.

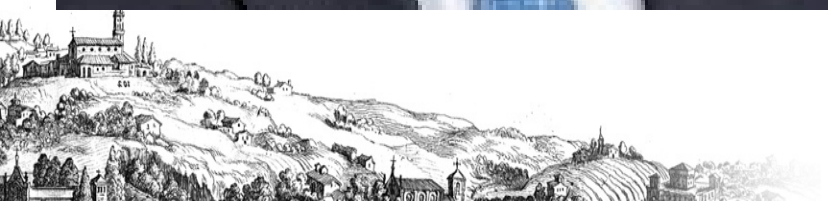
HELP

- PREHABILITATION
- REDUCTION IN OPIOID USE
- DEVELOPMENT OF SAFE AND EFFECTIVE INTRA AND POSTOPERATIVE ANTALGIC TECHNIQUES
- DEVELOPMENT OF FAST TRACK
- ENABLING RAPID MOBILISATION
- DON’T INTERFERE WITH NEUROLOGICAL ASSESSMENT

TECNICHE NEURASSIALI

- INTRATECALI
- PERIDURALI
- BLOCCO ERECTOR SPINAE


Safety in Spine Surgery
Transforming Patient Care and Optimizing Outcomes
Michael Vitale
Rajiv Sethi
Kevin Wang



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grazie