

Quale anestesia nel taglio cesareo?

Dott.ssa Silvia Rinaldi
U.O. Anestesia Rianimazione Ospedaliera



**Il lavoro di squadra
in sala parto**
Venerdì 27 aprile 2018
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...questa...

General, Epidural, Spinal, or CSE Anesthesia.

- The decision to use a particular anesthetic technique for cesarean delivery should be individualized, based on anesthetic, obstetric, or fetal risk factors (*e.g.*, elective *vs.* emergency), the preferences of the patient, and the judgment of the anesthesiologist.

Practice Guidelines for Obstetric Anesthesia

*An Updated Report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology**

ANESTHESIOLOGY 
The Journal of the American Society of Anesthesiologists, Inc.

Anesthesiology, V 124 • No 2 February 2016

Classificazione di Lucas

Grade	Definition*
(1) Emergency	Immediate threat to life of woman or fetus
(2) Urgent	Maternal or fetal compromise which is not immediately life-threatening
(3) Scheduled	Needing early delivery but no maternal or fetal compromise
(4) Elective	At a time to suit the woman and maternity team

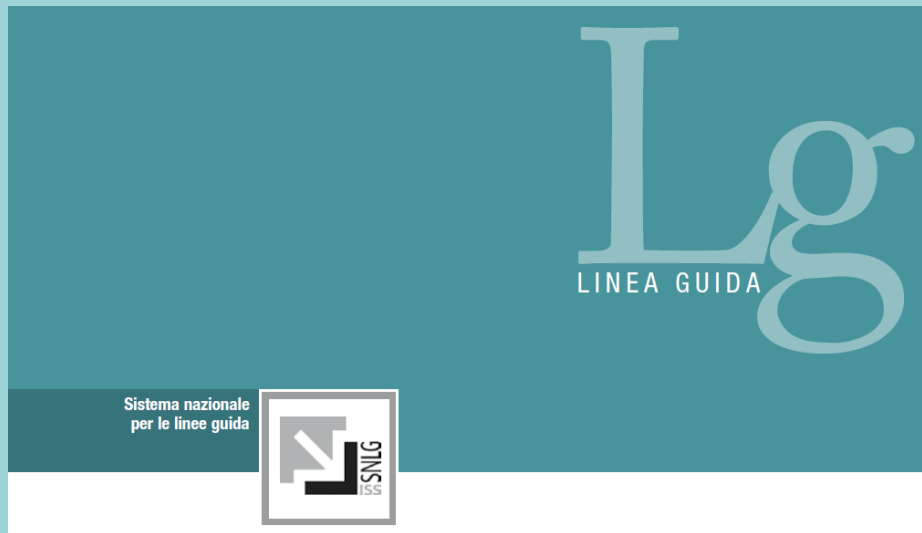
Lucas DN, Yentis SM et al. Urgency of caesarean section: a new classification. J R Soc Med 2000; 93: 346-50

Lucas modificata

Figure 1. A classification relating the degree of urgency to the presence or absence of maternal or fetal compromise

Urgency	Definition	Category
Maternal or fetal compromise	Immediate threat to life of woman or fetus	1
	No immediate threat to life of woman or fetus	2
No maternal or fetal compromise	Requires early delivery	3
	At a time to suit the woman and maternity services	4

Kinsella SM, Scrutton MJL. Assessment of a modified fourcategory classification of urgency of caesarean section. J Obstet Gynaecol 2009; 29: 110-3



Si raccomanda di utilizzare la seguente versione modificata della classificazione di Lucas:

- codice rosso – pericolo immediato per la vita della madre e/o del feto
- codice giallo – compromissione delle condizioni materne e/o fetali che non costituisce un immediato pericolo di vita
- codice verde – assenza di compromissione delle condizioni materne e/o fetali, ma necessità di anticipare il parto
- codice bianco – parto da inserire nella lista operatoria in base alle disponibilità del punto nascita.

A focused history and a physical examination

Survey Findings: The consultants and ASA members both strongly agree (1) to conduct a focused history and physical examination before providing anesthesia care and (2) that a communication system should be in place to encourage early and ongoing contact between obstetric providers, anesthesiologists, and other members of the multidisciplinary team.

Il punto di vista dell'anestesista

Regardless the type of anesthesia to be administered, precautions must be taken to minimize the risks

associated with:

- airway obstruction,
- aspiration of gastric contents,
- anesthesia-related hemodynamic changes,
- complications associated with anesthesia,
- intraoperative hemorrhage.

Il punto di vista dell'anestesista

- Prevenzione infezioni
- Prevenzione tromboembolie



Aspiration Prevention

(1) clear liquids,

(2) solids,

(3) antacids, H₂-receptor antagonists, and metoclopramide.

Antibiotico profilassi

NICE National Institute for
Health and Care Excellence

Timing of antibiotic administration

- 1.4.6.19 Offer women prophylactic antibiotics at CS before skin incision. Inform them that this reduces the risk of maternal infection more than prophylactic antibiotics given after skin incision, and that no effect on the baby has been demonstrated. **[new 2011]**
- 1.4.6.20 Offer women prophylactic antibiotics at CS to reduce the risk of postoperative infections. Choose antibiotics effective against endometritis, urinary tract and wound infections, which occur in about 8% of women who have had a CS. **[new 2011]**
- 1.4.6.21 Do not use co-amoxiclav when giving antibiotics before skin incision. **[new 2011]**

Hypothermia

Surveillance report 2017 – Caesarean section (2011)
NICE guideline CG132

Surveillance decision

Next >

NICE guideline CG132 does not include guidance about prophylaxis and management of hypothermia and shivering in women undergoing to CS. Evidence was identified around procedures to prevent and manage hypothermia and shivering in women having a CS. In NICE guideline CG65 hypothermia: prevention and management in adults having surgery, pregnant women are out of scope. In the previous surveillance review of NICE guideline CG65 they considered that the best place to address this issue is in NICE guideline CG132.

Decision: This question should be added.

Profilassi Tromboembolica

NICE National Institute for
Health and Care Excellence

Thromboprophylaxis for CS

1.4.6.22 Women having a CS should be offered thromboprophylaxis because they are at increased risk of venous thromboembolism. The choice of method of prophylaxis (for example, graduated stockings, hydration, early mobilisation, low molecular weight heparin) should take into account risk of thromboembolic disease and follow existing guidelines^[3]. [2004, amended 2011]

Anestesia preparazione

- CVP calibro adeguato (liquidi, antibiotico, farmaci, emoderivati)
- SpO2, NIBP, ECG; cardiococografia
- Cuneo
- Coperta ad aria calda

Cateterismo vescicale

NICE National Institute for
Health and Care Excellence

1.4.4.4 Women having CS with regional anaesthesia require an indwelling urinary catheter to prevent over-distension of the bladder because the anaesthetic block interferes with normal bladder function.
[2004]

Tecniche Anestesiologiche

ANESTESIA GENERALE

NEURASSIALI

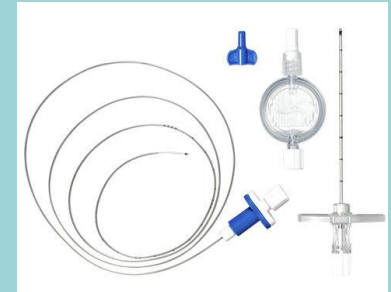
- Single-shot Spinal Anaesthesia (SSS)
- Epidural Anaesthesia
- CSE

Tecniche neuroassiali

Tecniche di scelta!



Perché?



Vantaggi

- Riducono fallimento IOT (pz ostetriche 1:300 vs pop generale 1:2230). *Samsoon et al. Anesthesia; 1987;*
- Ridotta aspirazione contenuto gastrico (pz da considerarsi sempre a stomaco pieno)
- Minimo trasferimento di farmaci al feto
- Soddisfazione materna; bonding materno-fetale; allattamento precoce
- Efficacia analgesica postoperatoria

Raccomandazioni

- Consider selecting neuraxial techniques in preference to GA for most cesarean deliveries.

NICE National Institute for
Health and Care Excellence

1.4.5.2 Women who are having a CS should be offered regional anaesthesia because it is safer and results less maternal and neonatal morbidity than general anaesthesia. This includes women who have a diagnosis of placenta praevia. [2004]



Failed tracheal intubation during obstetric general anaesthesia: a literature review

S.M. Kinsella,^a A.L. Winton,^a M.C. Mushambi,^b K. Ramaswamy,^c H. Swales,^d
A.C. Quinn,^e M. Popat^f

McKeen et al. definition

Overall incidence for all obstetric cases of 2.6 per 1000 general anaesthetics

The death rate from our series of incidence studies for failed intubation at rapid-sequence induction of general anaesthesia for caesarean section is 2.3 per 100000.

SSS: vantaggi

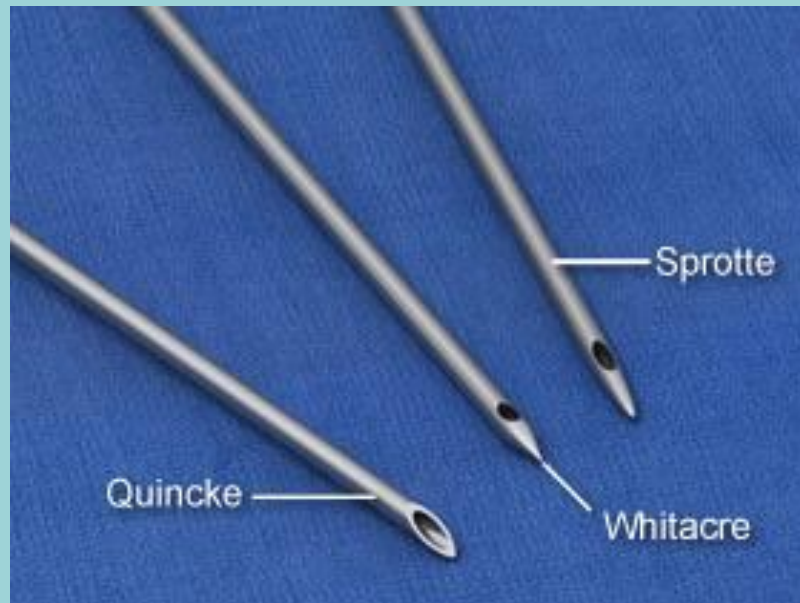
- Tecnicamente più semplice di EP
- Rapido onset- rapidamente crea il piano anestetico per la chirurgia
- Fallisce raramente <1% *Fettes et al. BJA 2009*
- Anestesici locali (tossicità minima e minima esposizione fetale)

SSS: svantaggi

- Durata limitata nel tempo
- Ipotensione da simpaticoplegia
- Nausea e vomito intraoperatori

Ago

- If spinal anesthesia is chosen, use pencil-point spinal needles instead of cutting-bevel spinal needles.



Ipotensione simpaticoplegica

- Diminuzione della PAS di almeno il 25% rispetto al valore basale
- Tachicardia compensatoria non sempre efficace
- Rischio direttamente correlato all'estensione caudale del blocco (>T4)
- Possibile comparsa di nausea e vomito da ipoperfusione cerebrale
- Distress fetale da ipotensione prolungata (vasi uteroplacentari a bassa resistenza, no autoregolazione) *Dyer et al. Acta Anaesthesiol Scand 2012*

Trattamento

- Cuneo per dislocazione dell'utero a sinistra e decompressione aorto-cavale
- Calze elastocompressive AAll
- Adeguato riempimento volemico
- Appropriato uso di vasopressori

Riempimento volemico

IV Fluid Preloading or Coloadng

- IV fluid preloading or coloadng may be used to reduce the frequency of maternal hypotension after spinal anesthesia for cesarean delivery.
- Do not delay the initiation of spinal anesthesia in order to administer a fixed volume of IV fluid.

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Health and Care Excellence

1.4.5.4 Women who are having a CS under regional anaesthesia should be offered intravenous ephedrine or phenylephrine, and volume pre-loading with crystalloid or colloid to reduce the risk of hypotension occurring during CS. [2004]

Vasopressori

Ephedrine or Phenylephrine

- Either IV ephedrine or phenylephrine may be used for treating hypotension during neuraxial anesthesia.
- In the absence of maternal bradycardia, consider selecting phenylephrine because of improved fetal acid–base status in uncomplicated pregnancies.

NICE National Institute for
Health and Care Excellence

1.4.5.4 Women who are having a CS under regional anaesthesia should be offered intravenous ephedrine or phenylephrine, and volume pre-loading with crystalloid or colloid to reduce the risk of hypotension occurring during CS. [2004]

A. peridurale: Vantaggi

- Ipotensione meno frequente e grave
- Modulazione dell'anestesia nel tempo
- Controllo antalgico postoperatorio ottimale



Svantaggi

- Onset anestesia lento e graduale
- Tecnica più complessa
- Quantità elevate di AL
- Distribuzione imprevedibile *Burn JM; B.J.A.; 1975*
- Aumentato rischio di tossicità



Anestesia epidurale

Nei TC URGENTI i tempi intercorrenti tra la decisione di procedere a TC e la nascita del feto sono sovrapponibili per AG, a. subaracnoidea e a. peridurale top-up [Popham et al. 2007; Lim et al. 2005]

- For urgent cesarean delivery, an indwelling epidural catheter may be used as an alternative to initiation of spinal or general anesthesia.

Meglio prevenire...

- Prophylactic neuraxial catheter insertion for obstetric (*e.g.*, twin gestation or preeclampsia) or anesthetic indications (*e.g.*, anticipated difficult airway or obesity)
- Assicurarsi che il catetere sia ben funzionante

Complicanze

- Cefalea post-puntura durale (PDPH)
- Ematoma spinale
- Ascesso spinale
- Danno nervoso permanente
- Low back pain
- Meningiti/Aracnoiditi



PDPH

SEMINARS IN PERINATOLOGY 38 (2014) 386–394



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Available online at www.sciencedirect.com

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www.elsevier.com/locate/semperi



Post-dural puncture headache: The worst common complication in obstetric anesthesia

Adam Sachs, MD, and Richard Smiley, MD, PhD*

Columbia University College of Physicians and Surgeons, 630 W 168th St PH5, New York, NY 10032



- SSS: 0,5-2% con ago “a punta di matita” (stimato <1% con aghi Whitacre G 27 n.d.r)
- Epidurale con ago di Tuohy (0,5% – 4%)

Ematoma spinale

■ PAIN AND REGIONAL ANESTHESIA

Anesthesiology 2004; 101:950-9

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Severe Neurological Complications after Central Neuraxial Blockades in Sweden 1990–1999

Vibeke Moen, M.D.,* Nils Dahlgren, M.D., Ph.D.,† Lars Irestedt, M.D., Ph.D.‡

- Incidenza nella popolazione chirurgica generale pari a 1:51.818
- Nella popolazione ostetrica 1:200.000
- E' molto più frequente in caso di peridurale/CSE rispetto alla SSS (1:18.000 vs 1:158.000)

Combined Spinal-epidural Anesthesia(CSEA)

- Offre vantaggi di entrambe le tecniche, in particolare:
- Rapidità
- Efficacia
- Bassa incidenza di fallimento (<2%)
- Modulabilità nel tempo
- Estensione del blocco
- Controllo antalgico ottimale postoperatorio

Anestesia generale

Indicazioni:

- Emergenza
- Coagulopatie
- Terapia anticoagulante
- Infezioni nella zona lombare
- Anestesia loco-regionale non riuscita
- Grave emorragia con instabilità emodinamica
- Alcune patologie cardiache
- Sepsi
- Ipertensione intracranica

Anesthesia generale

- General anesthesia may be the most appropriate choice in some circumstances (*e.g.*, profound fetal bradycardia, ruptured uterus, severe hemorrhage, severe placental abruption, umbilical cord prolapse, and preterm footling breech).

Rapid sequence!



Passaggio da partoanalgesia a TC

- La donna in travaglio con analgesia di parto in corso può necessitare di taglio cesareo (TC).
- Affrontare un TC non elettivo richiede ottima organizzazione ed efficace comunicazione tra i membri del team
- Codice-colore per grado di urgenza TC



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Conversione in urgenza dalla partoanalgesia al Taglio Cesareo

In condizione di **EMERGENZA**, che configura un immediato pericolo di vita per la donna e/o neonato (prolasso di funicolo, grave emorragia da distacco di placenta, sospetta rottura d'utero, grave sofferenza fetale acuta) si richiede un tempo di operatività, (inteso come intervallo di tempo fra il passaggio della donna dalla sala travaglio al momento dell'incisione chirurgica) il più breve possibile. L'indicazione medica condiziona direttamente la condotta anestesiologicala, che prevede l'esecuzione dell'ANESTESIA GENERALE secondo il Protocollo di gestione del TC in emergenza e il Protocollo di anestesia generale per il TC.

Nei casi di **URGENZA**, e, se la situazione clinica lo consente (tempi di operatività chirurgica di almeno 20-30 minuti) si utilizza il catetere peridurale per approfondire il piano di anestesia fino a livello chirurgico. In sala travaglio- parto, si somministrano boli di 3-4 ml di anestetico locale ogni 3-5 minuti per un totale di 15 ml (Lidocaina 2% bicarbonata).

Se non emergente...

- La somministrazione di boli della miscela anestetica già in sala travaglio
- L'utilizzo di anestetico locale ad onset rapido
- L'estensione del blocco (S5 -T4)

Extending epidural analgesia for emergency Caesarean section: a meta-analysis

S. G. Hillyard^{1,2*}, T. E. Bate², T. B. Corcoran^{1,3}, M. J. Paech^{3,4} and G. O'Sullivan²

International Journal of Obstetric Anesthesia (2012) 21, 294–309
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<http://dx.doi.org/10.1016/j.ijoa.2012.05.007>

ORIGINAL ARTICLE



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www.obstetranesthesia.com

Risk factors for failed conversion of labor epidural analgesia to cesarean delivery anesthesia: a systematic review and meta-analysis of observational trials

M.E. Bauer,^a J.A. Kountanis,^a L.C. Tsen,^b M.L. Greenfield,^a J.M. Mhyre^a

^a Department of Anesthesiology, University of Michigan Health System, Ann Arbor, MI, USA

^b Department of Anesthesiology, Brigham and Women's Hospital, Boston, MA, USA



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SPECIAL ARTICLE

Failed epidural top-up for cesarean delivery for failure to progress in labor: the case against single-shot spinal anesthesia

B. Carvalho

Department of Anesthesiology, Stanford University School of Medicine, Stanford, CA, USA

International Journal of Surgery Case Reports 28 (2016) 173–175



ELSEVIER

Contents lists available at ScienceDirect

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journal homepage: www.casereports.com



Suspected total spinal in patient having emergent Caesarean section, a case report and literature review



H. Virgin (MD) (Senior Consultant), E. Oddby (MD PhD) (Senior Consultant),
J.G. Jakobsson (Adj. Professor Senior Consultant Director of Doctoral Education Clinical
Research and Development)*

Department of Anaesthesia & Intensive Care Institution for Clinical Science, Karolinska Institutet, Danderyds University Hospital, SE 182 88 Stockholm, Sweden

E' possibile ridurre il rischio ?

- Eseguire anestesia subaracnoidea almeno 30 min dopo l' ultimo bolo in peridurale
- Ridurre la dose di anestetico del 20%
- Eseguire puntura subaracnoidea in posizione seduta
- Aspettare 90" prima di posizionare la paziente supina

In conclusion...

Survey Findings: The consultants and ASA members strongly agree that (1) equipment, facilities, and support personnel available in the labor and delivery operating suite should be comparable to those available in the main operating suite; (2) resources for the treatment of potential complications (*e.g.*, failed intubation, inadequate anesthesia, hypotension, respiratory depression, local anesthetic systemic toxicity, pruritus, and vomiting) should also be available in the labor and delivery operating suite; and (3) appropriate equipment and personnel should be available to care for obstetric patients recovering from major neuraxial or GA.

Grazie!!!

