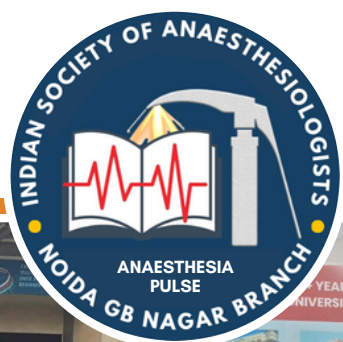


Volume 2 Issue 1 ~ Jan to Mar 2026

The Anaesthesia Pulse

The Official Newsletter of ISA Noida GB Nagar



Sareethon



CME at Metro Hospital



ISA Ghaziabad vs ISA Noida



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(President)



Dr. Kapil Singhal
(Founder President)



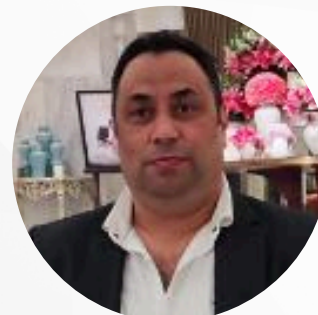
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Dr Peeyush Chaudhary

Dear Esteemed Colleagues and Members of ISA Noida GBN,

It gives me immense pleasure to connect with you through this quarter's newsletter and reflect on the vibrant months gone by.

This quarter was marked by both academic rigor and meaningful fellowship. Our monthly CMEs continued successfully at Child PGI, Metro Hospital, and Max Hospital in January, February, and March. The discussions were insightful and I thank all speakers, moderators, and participants for keeping our academic spirit strong.

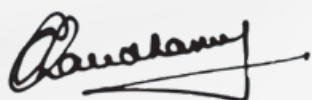
Beyond academics, we came together as a family. We welcomed the New Year with a well-attended family party at Noida Golf Course on 17th January, filled with warmth and camaraderie. The friendly cricket match between ISA Noida and ISA Ghaziabad on 22nd February brought out great sportsmanship and laughter. On 8th March, to mark International Women's Day, our members led a Saree Walkathon and public awareness drive at Noida Stadium, an initiative that blended purpose with community engagement.

ISA Noida continues to grow through the active participation of each one of you. Your support honors both our academic and non-academic pursuits, and strengthens the society we are building together.

Looking ahead, preparations are already underway for our next grand event: the Annual Foundation Day CME in July. We aim to make it a landmark gathering, and I look forward to your enthusiastic involvement.

Thank you for your dedication to the society and to our specialty. Together, let us keep learning, bonding, and serving.

Jai Hind, Jai ISA



Dr Peeyush Chaudhary



Dr Sonia Mathur

Greetings to all members of ISA Noida GB Nagar

As we move into April 2026, it is both a moment of reflection and renewed commitment for our branch. The first quarter of the year has been academically enriching and socially engaging, reflecting the collective enthusiasm and participation of our members. The year began in January with a focused academic session on NORA in paediatric patients and principles of paediatric pain management at PGICH Noida, setting the tone for practical, case-oriented learning. February continued this momentum with insightful discussions on awake craniotomy and anaesthesia management of fracture NOF in a morbidly obese patient with COAD, in Metro hospital, Noida along with a spirited ISA Ghaziabad vs ISA Noida Cricket Tournament that strengthened camaraderie beyond clinical spaces. March was equally vibrant, featuring academic deliberations on the role of ECMO in poisoning and a rare case of pneumocephalus following labour analgesia at Max Super Speciality Hospital. We also celebrated International Women's Day with the Sareethon ISA Panchrakshak event, beautifully capturing the spirit of "Draped in Tradition, Driven by Care." As we begin April, we are excited to promote wellness and participation through the ISA Walk to Win Challenge, encouraging members to prioritize health alongside professional excellence.

These months have reaffirmed that our strength lies not only in academic rigor but also in unity, participation, and shared purpose. Beyond structured academic programs, it is often our everyday clinical experiences that shape us most profoundly. Recently, during what was anticipated to be a routine case, an unexpected airway challenge reminded us how quickly situations can evolve in our field. In those critical moments, it is not just knowledge but composure, teamwork, and readiness that guide outcomes. As anaesthesiologists, we remain the silent guardians at the most vulnerable moments of a patient's journey—ensuring safety, comfort, and stability. I encourage all members to actively participate, share their experiences, and contribute to a culture of continuous learning and collaboration. Together, let us make 2026 a year of learning, innovation, and unity for ISA Noida GB Nagar.

"Together, behind the drapes, we make the difference"



Dr Sonia Mathur



Dr Priyankar Sarkar

Dear Esteemed Colleagues,

I am excited to bring to you the first issue of Volume 2 of The Anaesthesia Pulse. It chronicles the clinical meets held every month over the last 3 months in which there have been academic discussions over a wide range of anaesthesia and intensive care topics. Presently all our monthly meets are held in offline mode which allows members to interact and catch up, thus fostering camaraderie. Please turn to page 33 for a full list of hospitals hosting the monthly meets.

Our members also participated enthusiastically in 2 ISA National events—the Saree Walkathon and ISA Walk to win programs. Our branch gives a ready platform to our members to participate in such events and make their presence felt at a wider (State and National) level.

We are carrying 2 outstanding academic articles in this issue. I would like to thank Dr Shipra Singh for providing another easy-to-understand block for hip fracture (can be used in other indications as well) patients—the fascia iliaca compartment block. Hip fracture patients belong to a subgroup who needs to be optimised fast and operated soon, preferably within 24 hours.

The second article is on the suitability of rapid sequence intubation in pediatrics by Dr Poonam Motiani and Dr Rohan Motiani. It makes a persuasive case to adopt a different approach, the controlled RSI in which routine cricoid pressure is omitted.

Also we are shortly planning to host the 4th annual foundation day CME, dates of which will be announced in the near future. I would request everyone to come forward and participate enthusiastically in this event.



Dr. Priyankar Sarkar



ISA WALK TO WIN COMPETITION
INDIAN SOCIETY OF ANAESTHESIOLOGISTS
WILL BE CONDUCTING
WALK TO WIN COMPETITION

From 1st April 00.00 hrs to 6th April 00.00 hrs, Total 5 days

Walking Every Day Can Improve Your Overall Health

Invite people to join group "ISA Walk to Win"

Ask folks to scan QR code

Register as soon as possible and start walking from 1st April

Link for registration:
<https://forms.gle/JwvfKpJLJaAJvroA7>

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- ISA National conducted '**Walk to Win Life program**' for Life Members & ALMs between 1st April to 6th April on the occasion of World Health Day (7th April) online. As you all know, some of the prominent benefits of regular walking are reducing the risk of heart disease, stroke, and high blood pressure. lowering the risk of type 2 diabetes, weight management. Improves Immunity, bone and joint strength, improves cognitive function, improves sleep quality, lowers the risk of dementia and stress. "StepUp app" was used to participate after joining the group of ISA Walk to Win in the StepUp app. Walking started from 1st April and ended on 5th April 2026.
- Certificate of Participation was given to all the members who participated in it. Certificate of Appreciation was awarded to first 10 winners and first 100 female and first 100 males across India.
- Dr Ankita Sharma**, Executive Member of ISA Noida GB Nagar was the **Zonal Co-ordinator of Central Zone for this National Activity**. It is a matter of great pride that our members are participating actively at senior levels in ISA National programs and contributing to its growth.

JANUARY- 2026

The monthly meet was conducted by PGICH, Noida on 20th January 2026 in offline mode. The talk was presented on "NORA in paediatric patients" by Dr Bhumika, Assistant Professor and moderated by Dr Mukul Kumar Jain. Another interesting topic "Principles of pain management in pediatric patients" was presented by Dr Amrit Kaur and moderated by Dr Poonam Motiani.

1. NORA in Paediatric patients

Non- operating room anaesthesia (NORA) refers to sedation or general anaesthesia administered to children undergoing diagnostic or therapeutic procedures outside the traditional operation theatre, such as MRI, CT scan, cardiac catheterization, interventional radiology, and endoscopy. Its demand has surged due to increasing procedural complexity and the need for immobility and pain control in children.

Paediatric NORA presents unique challenges:

- Remote locations with limited access to the patient
- Unfamiliar or outdated equipment
- Suboptimal lighting, and
- Reduced immediate support staff.

Children especially infants and those with co morbidities (ASA>3), are at higher risk for airway complications, particularly with propofol use. **Emergency status, procedure site, and NORA location independently predict adverse events.**

Safety hinges on

- Thorough preoperative assessment
- Age-appropriate fasting
- Dedicated paediatric-trained anaesthesiologists
- Standardized monitoring (including capnography)
- Emergency drugs
- Equipment availability and
- Clear communication with proceduralists.

When organized with a dedicated paediatric sedation service, NORA is safe and efficient, with low major morbidity and mortality



2. Principles of pain management in pediatric patients

Effective pain management in children hinges to multimodal, age- appropriate approach, recognizing that pain is subjective and often undertreated due to communication barriers.

Key Principles

- Accurate Assessment-Prioritize self reported pain using validated age -specific scales (eg- include thorough assessment using validated tools like FLACC, Wong -Baker, FACES, NRS), use behavioral tools when self -report is impossible.
- Multimodal Approach- Combine pharmacological (paracetamol, NSAIDS, Opioids, adjuvant) and non- pharmacological strategies
- Distraction, positioning, parental presence, hypnosis for synergistic, opioid- sparing effects
- Preemptive & Scheduled Dosing- Administer analgesics at regular intervals based on pain, severity, not just "as needed" to prevent pain escalation
- Individualization- Tailor drug choice and dosing to the child's weight, age metabolic capacity, and co morbidities
- Family integration- Actively involve caregivers in comfort measures , assessment, and decision making , recognizing their critical role in the child's coping
- Functional Goals- For chronic pain, prioritize functional improvement and rehabilitation over complete pain elimination
- Prompt recognition, frequent reassessment, along with interdisciplinary management is the key for effective pain management.





February – 2026

The monthly meet was conducted by Metro Multispecialty Hospital, Noida on 12th feb 2026 in offline mode. The talks were presented on Awake Craniotomy – case discussion by Dr Vibha Chhabra , Consultant Anaesthesia , and Anaesthesia management of fracture femur in a morbidly obese patient with Chronic Obstructive Airway Disease by Dr Babar Khan Suri , Consultant Anaesthesia . The session was moderated by Dr Kapil Singhal , Director & HOD , Anaesthesia and Critical Care.

SYNOPSIS OF THE TALK

Awake Craniotomy - case discussion

It means a procedure where the patient is awake during critical portions of the surgery so that his vital functions such as speech and movement can be monitored continuously.

Allows mapping for resection of the brain tumors near the cerebral cortex and occasionally for epilepsy surgery and deep brain stimulation surgery. The approach maximizes lesion resection while sparing important foci such as motor, somatosensory and language areas.

Challenges for Anaesthesiologist

- Selecting appropriate patients
- Meticulous screening for psychological stability/cognitive function
- Ability to tolerate prolonged positioning
- Building trust between the patient and surgical team
- Achieving adequate anesthetic balance

The drugs chosen should be easily titrable, cardio-respiratory stable, and non interference in electrophysiological and cognitive testing.

The Anaesthetic management: the “asleep-awake – asleep” technique was employed. After SCALP BLOCK (auriculotemporal, supratrochlear, supraorbital, greater occipital), the head is fixed followed by TIVA using propofol and remifentanyl using a TCI pump was used in this case discussion . Adequate depth of anaesthesia was achieved and infusion was stopped intraoperatively when brain mapping was needed.

Benefits are maximal safe resection, real-time feedback and faster recovery

Anaesthesia management of fracture neck of femur in a patient with

Comorbid conditions–

- Morbidly obese
- Chronic obstructive airway disease
- Diabetes mellitus
- Hypertension
- Post pacemaker implantation

Plan: ORIF femur under subarachnoid block (SAB) followed by ORIF humerus under general anaesthesia with brachial plexus block

Problem: patient unable to sit for SAB

Solution: USG guided femoral nerve block with 12–15ml 0.5% levo-anawin

Later patient was placed in sitting position and spinal anaesthesia given with 0.5% levo-anawin and fentanyl. ORIF femur achieved with significant blood loss, hence ORIF humerus postponed for next sitting

Take home message

Femoral nerve block is one of the easiest nerve block with high success rate can provide good analgesia and make it easy for positioning for SAB



March – 2026

The monthly meet was conducted at Max Hospital, sector 128, Noida on 30th March in offline mode. The talk was given on the "Role of ECMO in celphos poisoning" by Dr Ashfaq, Additional director and another talk on "Pneumocephalus following labour analgesia a rare case report" by Dr Pooja Arora. Both the talks were moderated by Dr Gagan Shrivastava SR Director and HOD Max super speciality Hospital.

SYNOPSIS OF THE TALK

Role of ECMO in celphos poisoning – Extracorporeal membrane oxygenation, specifically veno-arterial configuration, serves as a critical bridge to recovery in severe Celphos (Aluminium phosphide poisoning) refractory to conventional therapy. AIP toxicity causes rapid, often fatal, refractory cardiogenic shock, severe metabolic acidosis and myocardial depression due to phosphine gas induced mitochondrial dysfunction.

Key clinical Role

- Hemodynamic support- VA-ECMO bypasses the failing heart and lungs maintaining systemic perfusion and oxygenation while the toxin is metabolized and eliminated, as cardiac injury is potentially reversible
- Mortality Reduction- In high risk patients (LVEF<35%, REFRACTORY HYPERTENSION) ECMO reduce in hospital mortality from 87% with conventional care to 33%,
- Timing- Early initiation (<6 hrs of presentation) before irreversible MOF correlates with significantly better survival

Considerations

ECMO is highly invasive, resource – intensive, and carries risk of bleeding, thrombosis, and infection. It is indicated only for selected patients with cardiogenic shock unresponsive to maximal inotropes, vasopressors and intra-aortic balloon pump serving as a temporizing measure until spontaneous cardiac recovery occurs.

2. Pneumocephalus following Labour Analgesia-

It was an interesting and rare case on the serious complication of neuraxial labour analgesia, occurring when air is inadvertently introduced into the intrathecal space during epidural catheter placement, typically via the "loss of resistance to air" technique following accidental dural puncture. Patients present with sudden, severe bifrontal or occipital headache, often immediate or within hours of the procedure, accompanied by neck pain, photophobia, nausea or vomiting. Unlike post- Dural puncture headache (PDPH) the pain may be non postural, persistent and poorly responsive to conventional analgesics Non contrast CT head confirms intracranial air, commonly in the frontal horns, ventricles or subarachnoid space, Most cases resolve spontaneously , with bed rest, 100% oxygen, hydration and analgesia. Air typically reabsorbs within 3-5 days with complete resolution in 1-2 weeks.

Prevention: use saline instead of air for loss of resistance to eliminate this risk entirely



ISA Noida GBN Women Anaesthesiologists along with women from other specialities, technicians, nurses with unwavering support of male Anaesthesiologists from the branch as their cheer leaders participated in Saree Walkathon (An Initiative by ISA National) as a part of Women's Day celebrations 2026. The activity was conducted at Noida Stadium on a bright sunny Sunday Morning of 07.03.2026. All who participated were a part of this beautiful initiative celebrating the strength, grace, and unity of women anaesthesiologists. We all came together in our traditional sarees and walked around the park area with the banner behind and with placards with pride to spread awareness and made this event truly memorable.

Explanation of the COLS protocol to the masses present in stadium with hands on the mannequin were done. The activity was concluded with a healthy breakfast at the venue. The enthusiastic participation of Women of all age group made the Sareethon a grand success. Everyone's enthusiasm, grace, and support truly reflected the spirit of the day.





हिन्दुस्तान

जिले में महिलाओं के बुलंद हौसलों की झलक दिखी

इंडियन सोसाइटी ऑफ एनेस्थेसियोलॉजिस्ट्स की नोएडा शाखा की महिला डॉक्टरों ने साड़ी परिधान में वाकथान किया। नोएडा स्टेडियम में हुए इस कार्यक्रम में जागरूकता कार्यक्रम का आयोजन भी किया गया। इस दौरान सीपीआर, घुटन प्रबंधन, रिकवरी आदि के बारे में जानकारी दी गई। कार्यक्रम में 30 से अधिक महिला और पुरुष एनेस्थेसिस्ट भी कार्यक्रम का हिस्सा रहे। इस मौके पर इंडियन सोसाइटी ऑफ एनेस्थेसियोलॉजिस्ट्स यूपी के पूर्व अध्यक्ष डॉ. कपिल सिंघल, नोएडा की सचिव डॉ. सोनिया माथुर, अध्यक्ष डॉ. पोयूष चौधरी आदि मौजूद रहे।



नोएडा स्टेडियम में सीपीआर के बारे में लोगों को जानकारी देती महिला डॉक्टर।



Fascia Iliaca Compartment Block: Indications, Technique (Landmark based & USG), Complications

Dr. Shipra Singh
Principal consultant
Yatharth superspeciality hospital , Greater Noida

Introduction

Regional anesthesia for lower limb surgery and trauma has evolved substantially over the past few decades. Among the available techniques, the fascia iliaca compartment block occupies a unique position: it provides reliable analgesia to the anterior thigh and hip through a single injection that targets multiple nerves simultaneously

Relevant Anatomy

The Fascia Iliaca Compartment

Understanding FICB requires appreciation of the fascial layers of the anterior thigh and pelvis. The fascia iliaca is a strong, glistening membrane that covers the iliacus and psoas muscles-- thin above, and becomes gradually thicker below as it approaches the inguinal ligament.

It is bound superolaterally by the iliac crest and merges medially with the fascia overlying the psoas muscle .

Three major nerves traverse or lie adjacent to the fascia iliaca compartment:

Femoral Nerve (L2-L4) The largest branch of the lumbar plexus emerges from the lateral border of the psoas major, descends in the groove between the psoas and iliacus muscles, and passes beneath the inguinal ligament lateral to the femoral artery. It provides motor innervation to the quadriceps and sensory innervation to the anterior thigh, medial leg (via the saphenous nerve), and hip joint (via articular branches).

Lateral Femoral Cutaneous Nerve (L2-L3) This purely sensory nerve emerges from the lateral border of the psoas, crosses the iliacus obliquely, and enters the thigh by passing under or through the inguinal ligament near the anterior superior iliac spine. It innervates the lateral thigh from the greater trochanter to the knee.

Obturator Nerve (L2-L4) This nerve descends along the medial border of the psoas, crosses the sacroiliac joint, and exits the pelvis through the obturator foramen. It provides sensory innervation to the medial thigh and a variable contribution to the hip joint. Whether FICB reliably blocks the obturator nerve remains debated.

Analgesic coverage

Block of the femoral nerve results in anesthesia of the anterior and medial thigh (down to and including the knee) and anesthesia of the variable strip of skin on the medial leg and foot . The femoral nerve also contributes to articular fibers to both the hip and knee. The lateral femoral cutaneous nerve confers cutaneous innervation to the anterolateral thigh

Indications

Hip Fractures

This represents the primary indication for FICB. Femoral neck, intertrochanteric, and subtrochanteric fractures cause severe pain exacerbated by movement and the patient population—typically elderly tolerates systemic analgesics poorly. Multiple randomized controlled trials have shown that FICB:

- Reduces pain scores at rest and during movement
- Decreases opioid consumption in the perioperative period
- Lowers incidence of delirium compared to systemic opioid regimens
- Facilitates positioning for spinal anesthesia

Current guidelines from various anaesthesia societies endorse early FICB—ideally in the emergency department—for hip fracture patients.

- Hip Arthroplasty
- Femoral Shaft Fractures
- Anterior Thigh Procedures

TECHNIQUES

1. Landmark-Based (Dalens' Technique)

The original description remains relevant, particularly in resource-limited settings:

Patient position: Supine with the leg in neutral rotation.

Landmarks:

- Draw a line from the anterior superior iliac spine (ASIS) to the pubic tubercle (representing the inguinal ligament)
- Divide this line into thirds
- The needle insertion point lies 1 cm caudal to the junction of the lateral and middle thirds

Procedure:

- After sterile preparation, insert a blunt-tip or short-bevel needle perpendicular to the skin
- Advance until two distinct "pops" are felt—the first as the needle penetrates the fascia lata, the second as it pierces the fascia iliaca
- Aspirate to exclude vascular puncture
- Inject local anesthetic (typically 30–40 mL in adults) with intermittent aspiration

Limitations:

- The success rate is inconsistent, ranging from 38% to 82% . The "pop" sensation is subjective and may be absent in elderly patients with attenuated fasciae.

2. Ultrasound-Guided Infra-Inguinal Approach

Ultrasound has substantially improved FICB reliability by allowing direct visualization of fascial layers and needle tip placement.

Equipment:

- High-frequency linear transducer (6–15 MHz); lower frequency curved array may be needed in obese patients.

Scanning technique:

- Place the transducer parallel to the inguinal ligament at the level of the inguinal crease
- Identify the femoral artery and vein medially
- The femoral nerve appears as a hyperechoic oval or triangular structure lying on the iliopsoas beneath the fascia iliaca
- Move the transducer laterally to visualize the sartorius muscle (superficial, triangular), the iliopsoas muscle (deep), and the fascia iliaca as a hyperechoic line lying above the iliacus muscle

Needle insertion:

- Use an in-plane approach from lateral to medial
- Advance the needle through skin, subcutaneous tissue, and fascia lata
- Penetrate the fascia iliaca—often visible as a distinct "pop" or give

Confirm needle tip position beneath the fascia iliaca and above the iliopsoas muscle

- Inject 1–2 mL to confirm correct plane (local anesthetic should spread both medially toward the femoral nerve and laterally along the fascia iliaca)
- Complete injection with appropriate volume

Supra-Inguinal Approach

Described by Hebbard in 2011 and subsequently refined, the supra-inguinal FICB targets the fascia iliaca compartment above the inguinal ligament facilitating better spread proximally

Equipment:

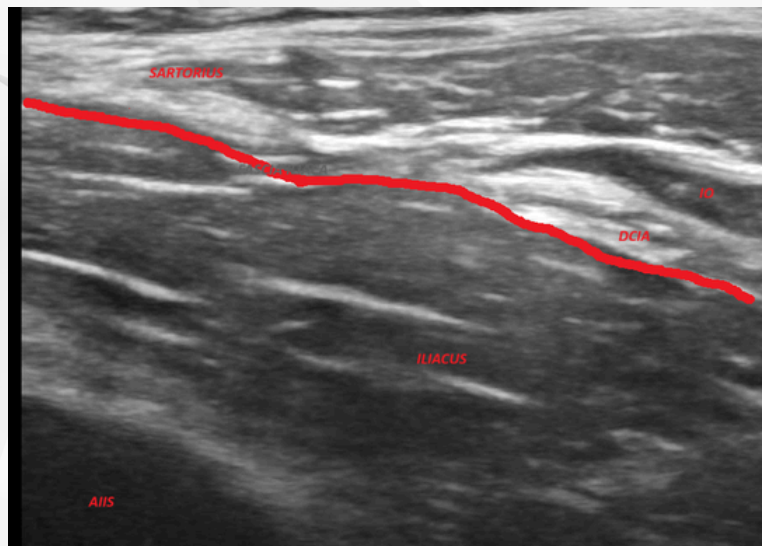
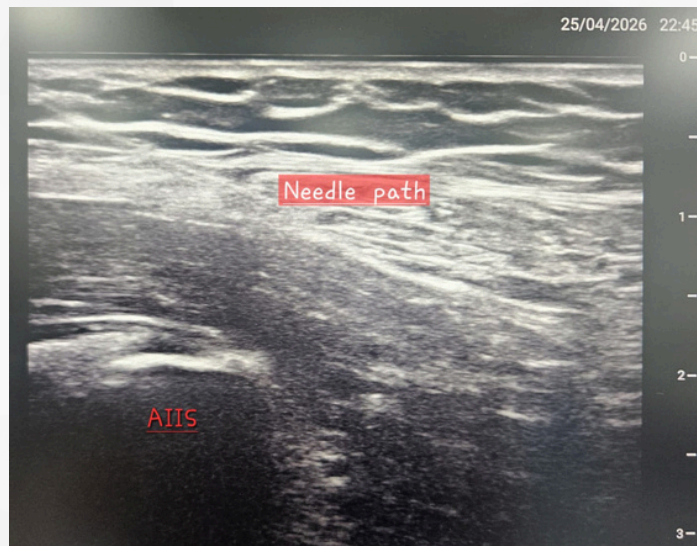
- High-frequency linear transducer (6–15 MHz)
- 21G or 22G echogenic block needle, 100–120 mm.
- Ropivacaine 0.375% or Bupivacaine 0.25%; total volume 30–40 mL.

Transducer position: Placed in a sagittal oblique orientation, starting at the ASIS and angling medially, transducer to be preferably kept perpendicular to inguinal ligament. "Bowtie" or "hourglass" configuration may be visualised with internal oblique muscle on cephalad side with sartorius on the caudad end sitting atop iliacus muscle at the level of anterior inferior iliac spine .

Key landmarks:

- Anterior inferior iliac spine
- Internal oblique muscle
- Fascia iliaca
- Iliacus muscle

"Deep circumflex iliac artery" coursing between internal oblique and fascia iliaca—this vessel marks the correct fascial plane and also a structure to avoid



Complications

FICB is among the safest regional anesthesia techniques, though complications can occur:

- Local Anesthetic Systemic Toxicity (LAST)
- Vascular Puncture and Hematoma
- Infection
- Nerve Injury
- Block Failure
- **Quadriceps Weakness and Falls**

Femoral nerve blockade causes quadriceps weakness. This is expected and should be communicated to the patient and care team. Fall precautions are essential—patients should not ambulate unsupervised with dense motor block.

Conclusion

The fascia iliaca compartment block represents a well-validated, versatile technique for lower limb analgesia. Its anatomical approach—targeting a fascial compartment rather than individual nerves—enables single-injection coverage of multiple nerves with a favorable safety profile.

Ultrasound guidance has enhanced reliability and safety, while the supra-inguinal approach has improved anatomical coverage.

For the practicing regional anesthesiologist, mastery of FICB—in both its infra-inguinal and supra-inguinal variants—is essential. For the anesthesia community, recognition of FICB's role in hip fracture care can improve outcomes for a vulnerable patient population.

Rapid Sequence Induction in Children: Rethinking the Classical Approach

Dr Rohan Motiani 1, Dr Poonam Motiani 2,

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2Department of Paediatric Anaesthesia, Post Graduate Institute of Child Health, Noida

Introduction

Rapid sequence induction (RSI) was introduced into anaesthesia to protect the lungs from aspiration of gastric contents in patients with a full stomach. The key elements of classical RSI are preoxygenation with 100% oxygen, application of cricoid pressure, a depolarising muscle relaxant (suxamethonium), and an apnoeic period of approximately 60 seconds before tracheal intubation.¹ The perceived benefit in high-risk patients led RSI to become standard of care, despite limited high-quality supporting evidence.

Because the technique was developed in adults, several authors have questioned the appropriateness of unmodified classical RSI in children.

HOW THE RISK FACTORS DIFFER IN CHILDREN

1. Aspiration risk: a different hierarchy

In children, the dominant determinants of perioperative aspiration are not the same as in adults.⁵ In approximate descending order of importance:

- Anxiety and behaviour: distressed children cry, scream, swallow air and develop abdominal distension.
- Inadequate or 'light' anaesthesia at induction: instrumentation of the airway before adequate depth leads to coughing and vomiting – a far more consistent trigger for regurgitation than absence of cricoid pressure.
- Gastric distension from forced bag-mask ventilation or accidental oesophageal intubation.
- Raised intra-abdominal pressure: intestinal obstruction, intra-abdominal tumours, ascites.
- Difficult airway, gastrointestinal pathology, obesity.
- Gastro-oesophageal reflux: shorter oesophagus, obtuse angle of His, decreased gastric compliance, transient lower oesophageal sphincter relaxation, abdominal muscle contraction.
- Sepsis, renal failure and preoperative opioid administration.

2. Reduced apnoea tolerance

Neonates and infants desaturate within seconds rather than minutes. Computational modelling shows that healthy infants reach an SpO₂ of 90% within 70–90 seconds of apnoea even after full preoxygenation, whereas adolescents tolerate four to six minutes.⁶ The classical RSI assumption that intubation will be quick enough to spare any need for ventilation is therefore a far narrower margin in children, and one that smaller children frequently breach.

3. Reducing the Risk of Aspiration

Pharmacological pre-treatment with prokinetics, H₂ blockers, proton pump inhibitors or antacids has not been shown to reduce aspiration. Nasogastric aspiration reduces gastric volume but cannot reliably empty the stomach. Standard fasting guidelines, derived from elective populations, are an unreliable safeguard in non-elective paediatric cases: in one study, 49% of children admitted after trauma had significant residual gastric aspirates even after eight hours of starvation.⁷ Prolonged fasting itself produces an irritable, dehydrated and hypoglycaemia-prone child, paradoxically worsening the very behaviours that drive aspiration risk.

4. Preoxygenation

Preoxygenation increases the lung oxygen reserve by denitrogenation of the FRC; full denitrogenation requires an end-tidal oxygen fraction > 0.9. Children are particularly vulnerable to atelectasis during this phase because of their reduced FRC and rapid respiratory rate; airway patency and CPAP via a tight-fitting mask are essential.

5. Cricoid Pressure: Cornerstone or Misnomer?

Cricoid pressure relies on backward displacement of the cricoid cartilage occluding the oesophagus to prevent regurgitation. Anatomical and clinical evidence cast doubt on this mechanism in children. In a CT study of 120 children, 45% of those under eight years had lateral displacement of the oesophagus relative to the cricoid cartilage, compared with only 15% of older children – making mechanical occlusion improbable in the very age group classical RSI most threatens.⁸ Bronchoscopic measurement has shown that forces as low as 7.7 N can compress the paediatric airway, far below the 30 N taught for adults; higher forces routinely worsen the laryngoscopic view.⁹

Cricoid pressure also decreases lower oesophageal sphincter tone – theoretically promoting passive regurgitation – and untimely application before adequate anaesthetic depth may provoke vigorous bucking and straining, themselves potent triggers of aspiration. Survey data show that only about half of anaesthetists routinely apply it in children aged 1–14 years, and only 40% in infants.³ Its principal residual value is in reducing gastric insufflation during bag-mask ventilation, not in occluding the oesophagus

Induction Agents and Neuromuscular Blockers

No single induction agent possesses every desirable attribute for paediatric RSI. Thiopental and propofol predominate, with ketamine reserved for haemodynamically unstable children or those with reactive airways disease; both thiopental and propofol require larger weight-adjusted doses than in adults. Fentanyl 1–2 µg kg⁻¹ blunts the pressor response and is appropriate when reliable bag-mask ventilation is anticipated.

Succinylcholine 2 mg kg⁻¹ remains the fastest-onset neuromuscular blocker but carries paediatric-specific risks (hyperkalaemia in undiagnosed myopathies, malignant hyperthermia, masseter spasm, bradyarrhythmias), and its 4.7-minute average recovery time cannot be relied on to outpace desaturation in a small child. Rocuronium 1.2 mg kg⁻¹ produces comparable intubating conditions free of these adverse effects, and is rapidly reversible with sugammadex 16 mg kg⁻¹ – though sugammadex availability in resource-limited settings remains a constraint. Atracurium 1 mg kg⁻¹ is described in the original cRSI protocol as an acceptable alternative.

Risks of Classical RSI in Children

- Hypoxemia
- Difficult intubation
- Questionable benefit in preventing aspiration

Controlled RSI (cRSI): A Paradigm Shift

The cRSI concept retains the protective intent of classical RSI but explicitly replaces no-ventilation apnoea with gentle bag-mask ventilation until the airway can be secured under optimal conditions.¹³ Its essential elements are:

- Continuous aspiration of any nasogastric tube already in situ; if absent, an NG tube is inserted only after the airway is secured.
- Patient positioned 20° head-up during preoxygenation and induction.
- Titration of induction agent to produce hypnosis, followed by a non-depolarising relaxant (rocuronium 1.2 mg kg⁻¹ or atracurium 1 mg kg⁻¹). The choice matters less than guaranteeing optimal relaxation, monitored by a peripheral nerve stimulator.
- Gentle bag-mask ventilation, peak inspiratory pressure ≤ 12 cm H₂O – sufficient to oxygenate, low enough to avoid clinically significant gastric insufflation.
- Routine cricoid pressure omitted.
- Tracheal intubation only after train-of-four count is zero, allowing adequate anaesthetic depth and complete muscle paralysis.

Clinical Evidence

Neuhaus and colleagues prospectively analysed 1001 children managed with a standardised cRSI protocol in a tertiary paediatric centre.¹¹ Moderate hypoxaemia occurred in only 0.5% and severe hypoxaemia in 0.3%; bradycardia and hypotension did not occur. There was a single regurgitation episode (0.1%) and no detectable pulmonary aspiration. Difficult intubation was documented in 0.5%.

Earlier simulation work demonstrated that classical RSI in infants generated significantly more 'unsafe actions' and higher provider stress than cRSI, and was almost invariably accompanied by hypoxia in the simulated infant with pyloric stenosis.¹⁴ Survey data show that anaesthetists with greater paediatric exposure are more likely to omit cricoid pressure and to use mask ventilation during a high-risk induction.¹⁵ Taken together – observational, simulation-based and survey – the evidence base favours cRSI as a safer technique in children at risk of aspiration, with no signal of increased aspiration risk.

Element	Classical RSI	Controlled RSI (cRSI)
Position	Supine	20° head-up
Mask ventilation	Avoided	Gentle, PIP $\leq$ 12 cm H ₂ O
Neuromuscular blocker	Succinylcholine 1.5–2 mg kg ⁻¹	Rocuronium 1.2 mg kg ⁻¹ or atracurium 1 mg kg ⁻¹
Cricoid pressure	Routine	Generally omitted
Intubation timing	As fast as possible	After confirmed full neuromuscular block (TOF = 0)
Difficult intubation	1.7% ¹⁰	0.5% ¹¹
Hypoxaemia (combined moderate + severe)	Up to 23% ¹⁰	0.8% ¹¹

Table 1. Classical RSI versus controlled RSI (cRSI) in children – key technical differences and reported complication rates. PIP, peak inspiratory pressure; TOF, train-of-four.

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ISA Noida GBN & ISA Ghaziabad Host Friendly Cricket Match Cum Family Outing

12th February 2026 | TNM Grounds, Indirapuram

What's better than cricket on a sunny February morning? Cricket with family, food, and friends from both sides of the border!

ISA Noida GBN and ISA Ghaziabad jointly organised a Friendly Cricket Match Cum Family Outing on 12th Feb 2026 at TNM Grounds, Indirapuram, and it was a day to remember. The action kicked off with Noida winning the toss and choosing to bat. They put up a strong 178/7 in 15 overs, setting up an exciting chase. Team Ghaziabad kept their cool and crossed the line in 14.2 overs with just 4 wickets down, clinching a well-deserved win. But the match was only half the story.

Families turned out in full force, and the atmosphere was festive with excellent arrangements for snacks, drinks, and a hearty lunch. From kids cheering boundaries to grandparents enjoying the winter sun, it was truly a family affair. The winning Ghaziabad team lifted the trophy amidst loud cheers. Individual brilliance was celebrated too, with awards for Best Batsman, Best All-Rounder, Best Fielder, and Man of the Match. More than runs and wickets, the day was about camaraderie and cooperation between the two neighbouring ISA branches.

A perfect mix of relaxation and exhilaration — exactly what a family outing should be. Kudos to both ISA Noida GBN & ISA Ghaziabad for a splendidly organised event. Looking forward to the rematch!



Friendly Cricket Match Cum Family Outing



ISA Noida GBN members let their hair down in style to celebrate the many awards won at National level and also to usher in the New Year 2026 in grand style



List of venues for the monthly CME events of ISA Noida

- Jan – Post Graduate Institute of Child Health, Noida
- Feb – Metro Hospital & Heart Institute, Noida
- March – Max Superspeciality Hospital, Sector 128, Noida
- April – Apollo Hospital, Noida
- May – Cloudnine Hospital, Sector 50, Noida
- June – Mahanandan Hospital, Greater Noida
- July – Sharda Hospital, Greater Noida
- August – Government Institute of Medical Sciences, Greater Noida
- Sept –Yatharth Superspeciality Hospital, Greater Noida
- October – Kailash Hospital and Neuro Institute, Sector 71, Noida
- November – Neo hospital, Noida
- December – ESIC Hospital Noida

- 4th Annual Foundation Day CME 2026-- TBA

We are proud of our very own Dr Satyender Kumar who competed at and completed the arduous 130th Boston Marathon.



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