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CLINICAL INFORMATION

Foot drop: an iatrogenic complication of spinal anesthesia

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KEYWORDS

Spinal anesthesia;
Paresthesia;
Magnetic resonance
imaging;
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Abstract

Background and objectives: Foot drop in postoperative period is very rare after spinal anesthesia. Early clinical assessment and diagnostic interventions is of prime importance to establish the etiology and to start appropriate management. Close follow-up is warranted in early postoperative period in cases when patient complain paresthesia or pain during needle insertion or drug injection.

Case report: A 22-year-old male was undergone lower limb orthopedic surgery in spinal anesthesia. During shifting from postoperative ward footdrop was suspected during routine assessment of regression of spinal level. Immediately patient was referred to neurologist and magnetic resonance imaging (MRI) was done, which was inconclusive. Conservative management was started and nerve conduction study was done on 4th postoperative day that confirmed pure motor neuropathy of right paroneal nerve. Patient was discharged with ankle splint and physiotherapy after slight improvement in motor power (2/5).

Conclusions: Foot drop is very rare after spinal anesthesia. Any suspected patient must undergo emergent neurological consultation and magnetic resonance imaging to exclude major finding and need for early surgical intervention.

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PALAVRAS-CHAVE

Anestesia espinal;
Parestesia;
Imagem de
ressonância
magnética;
Fisioterapia

Pé caído: uma complicação iatrogênica da anestesia espinal

Resumo

Justificativa e objetivos: Pé caído no período pós-operatório é muito raro após a anestesia espinal. Avaliação clínica e intervenções diagnósticas precoces são de primordial importância para estabelecer a etiologia e iniciar o tratamento adequado. Um acompanhamento atento é justificado no pós-operatório imediato nos casos em que o paciente se queixa de parestesia ou dor durante a inserção da agulha ou da injeção de fármacos.

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Relato de caso: Paciente do sexo masculino, 22 anos de idade, submetido à cirurgia ortopédica de membros inferiores sob anestesia espinal. Durante a transferência para a sala de recuperação pós-operatória, houve suspeita de pé caído durante a avaliação rotineira da regressão do nível espinal. O paciente foi imediatamente encaminhado ao neurologista e uma ressonância magnética (RM) foi realizada, mas não foi conclusiva. O manejo conservador foi iniciado e o estudo de condução nervosa foi realizado no 4º dia de pós-operatório, o que confirmou a neuropatia motora pura do nervo peroneal direito. O paciente foi dispensado com imobilizador de tornozelo e fisioterapia após ligeira melhora da potência motora (2/5).

Conclusões: Pé caído é muito raro após a anestesia espinal. Qualquer paciente suspeito deve ser submetido à consulta neurológica de emergência e ressonância magnética para excluir o principal achado e a necessidade de intervenção cirúrgica precoce.

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Introduction

Spinal anesthesia contributes a major part of current anesthesia practice and an anesthetic modality of choice in patients undergoing lower abdominal, gynecological and lower limb surgeries. Although patient safety is very high, still it is not absolutely free of complications. Postoperative neurological deficits, although very uncommon, can be very distracting for both patient and anesthesiologist. These may include paraplegia, hemiplegia, cauda equina syndrome, transient neurologic symptoms, etc.¹⁻⁴ Foot drop is a very rare adverse outcome after spinal anesthesia. Only few cases were reported in previous literature.⁵⁻⁷

Case report

A young male, aged 22 year posted for close reduction and internal fixation with interlock nailing for fracture on distal one third of left tibia following a road traffic accident. On preoperative examination history and physical examination were not suggestive of any previous neurological, muscular and hematologic disease. Patient hemodynamic parameters were normal for his age and routine investigations were in the normal range including coagulation profile. Patient was advised tablets pantoprazole 40 mg and lorazepam 2 mg at night before surgery and 6 AM in morning with sip of water.

On day of surgery, on arrival in operation room, a 18G intravenous (IV) cannula was secured in left hand and ringer lactate was started at rate of 15 mL.kg⁻¹.h⁻¹. Standard anesthesia monitoring including 5 lead electrocardiogram (ECG), pulse oximetry and non-invasive blood pressure (NIBP) were initiated and baseline hemodynamic parameters were noted. Under all aseptic precautions, a 25 G Quincke needle was inserted in the L3-L4 interspace, midline approach in sitting position with bevel facing laterally. As the needle advanced, patient complained for jerk in his right lower limb. Immediately, the needle was slightly withdrawn. On free flow of cerebrospinal fluid, 2.5 mL of 0.5% hyperbaric bupivacaine was injected in subarachnoid space and patient was laid supine. During injection of local

anesthetic patient not complained any pain or paresthesia. At 5 min after drug injection, sensory level was T10 and modified bromage score was 3 and surgeon is informed to start surgery. Intraoperative period was uneventful except single episode of hypotension (blood pressure – 90/46 mmHg) which was easily managed with single dose of intravenous ephedrine. At end of surgery patient was transferred to postoperative care unit with sensory level T12 and motor score 3. After 3 h, patient was planned to shift in orthopedic ward and during routine assessment of motor and sensory level by caring anesthetist patient found to be unable to dorsiflex his right foot. At this point sensory level was S1 while bromage score was 0 in both limbs.

Neurologist was consulted, who diagnosed this case as right-sided foot drop with complete loss of ankle dorsiflexion (1/5). Deep tendon reflexes were normal (2+) in both lower limbs. Emergent magnetic resonance imaging was done, which was inconclusive for clinical findings, with no evidence of a hematoma. Patient was kept under neurologist observation for early detection of progression of symptoms where he was treated with intravenous steroid, oral analgesics and multivitamin along with intense physiotherapy.

On 4th postoperative day nerve conduction study was done which showed pure motor neuropathy of right peroneal nerve (Tables 1-3). After confirmation of nonprogressive nature of symptoms and slight improvement in motor power (2/5), patient was discharged on the 8th postoperative day with ankle splint and advice of regular physiotherapy. During follow-up at one month, on examination, there was further improvement in motor power (3/5 ankle dorsiflexion). The patient was advised to continue with the physiotherapy and ankle support.

Discussion

Foot drop is defined as patient inability to dorsiflex the foot. Foot drop in perioperative period has multiple etiologies like sciatic or peroneal (common or deep) nerve injury, lumbosacral root trauma or compression, etc. Probability of sciatic and peroneal nerve injury is more obvious in

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