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Ambulatory Surgery 4 (1997) 175–177

Ambulatory Surgery

Regional block anaesthesia in ambulatory surgical treatment of lower limb varicose veins

S. Pierdominici [a,*], A. Cristaldi [a], M. Portieri [a], M. Segneri [a], M. Campagnol [b], M.M.O.E. Morelli [b], P. Proietti [b]

[a] *Instituto di Anestesia e Rianimazione, Universita degli Studi di Roma, 'La Sapienza', Policlinico Umberto I, Viale Policlinico, 161, 00161 Roma, Italy*

[b] *Instituto di Clinica Chirurgica, Università degli studi di Roma, 'La Sapienza', Policlinico Umberto I, Viale Policlinico 161, 00161 Roma, Italy*

Abstract

Ambulatory or Day Hospital surgery is economically advantageous but requires care in patient selection, choice of anaesthesia, drug administration and discharge criteria. Locoregional anaesthesia is particularly suitable in the treatment of lower limb varicose veins since complete reversal of the anaesthetic block in a few hours in non-hospitalized patients is possible. Our experience over 18 months involved 66 patients, aged 18–65 years, affected by venous insufficiency of the lower limbs belonging to ASA I and ASA II groups. We evaluated the patient's and surgeon's approval of the method and the need for systemic analgesia, perioperative sedation and/or further infiltration to complete the block. In the post-operative period we also evaluated mobilization, the need for analgesic therapy and the ability to discharge the patient. Troncular anaesthesia proved to be suitable for this kind of surgery, with a discomfort incidence of about 15% (patients who required sedation or analgesia). © 1997 Elsevier Science Ireland Ltd.

Keywords: Day surgery; Locoregional anaesthesia; Anaesthesia; Troncular block; Anaesthetic block

1. Introduction

Ambulatory or Day Hospital surgery is economically advantageous but requires care in patient selection, choice of anaesthesia, drug administration and discharge criteria.

Today, this kind of surgery is growing because it makes it possible to increase the number of patients operated upon without hindering the hospital departments. Furthermore, it is liked by patients who prefer to avoid hospitalization.

Locoregional anaesthesia is particularly suitable in the treatment of lower limb varicose veins since complete reversal of the anaesthetic block within a few hours in non-hospitalized patients is possible.

Several authors [1–4] have suggested different locoregional anaesthetic techniques for lower limb surgery. These include peridural anaesthesia, subarachnoid anaesthesia, superselective spinal anaesthesia, ischiatic and femoral block and Winnie's block (3 in 1).

Troncular anaesthesia is not used frequently in clinical training, although with a good anatomical knowledge and overall utilization of electrostimulation (ENS), good results in peripheral block [5], can be obtained.

We used this technique, generally carried out in orthopaedic surgery of the lower limbs, in saphenectomy. It proved to be effective with few complications.

The aim of our study was to evaluate lower limb troncular block in Day Surgery treatment of varicose veins.

* Corresponding author. Tel.: +39 6 4463101/2; fax: +39 6 4461967.

PII S0966-6532(97)00154-6

2. Materials and methods

Our experience over 18 months involved 66 patients, aged 18–65 years, affected by venous insufficiency of lower limbs belonging to ASA I and II groups. Patients were evaluated before the operation, and informed about the anaesthetic technique. We required the presence of someone to take care of them at home after the operation.

Locoregional anaesthesia, facilitated with the Electro Neuro Stimulator (Ecostim 900) affected a retrograde ischiatic nerve block, a Winnie block (3 in 1) at the level of the inguinal ligament and infiltration of the inguinal region [6].

The ENS generated DC electrical impulse through a metallic needle. The needle, which locates and stimulates the nerve, has an exposed tip but insulated sides to avoid accidental stimulation and thus reducing the risk of injecting the anaesthetic in the wrong sites.

The amplitude of the impulse made it possible to stimulate only nervous and not muscular tissue. With an amplitude of 0.5–1 mA nervous structures were stimulated at a distance of about 1–1.5 mm from the tip: rhythmical contraction of muscular masses innervated by the stimulated nerves [5] was observed.

Troncular block was carried out with a solution of local anaesthetics containing mepivacaine 2% and bupivacaine 0.25% with a 3:1 ratio. Infiltration was performed with mepivacaine 1% and bupivacaine 0.25% in equal parts.

The volumes of anaesthetic solution administered were 20 ml for the ischiatic nerve, 8–10 ml for the Winnie block and 15 ml for the inguinal region.

ECG, NIBP and SatO2 were monitored (Datex Cardiocap II). Moreover, we maintained dialogue with the patient to keep him calm and to evaluate the appearance of complications.

After the operation, observation was continued for about 8 h.

We evaluated the patient's and surgeon's approval of the method and the need for systemic analgesia, perioperative sedation and/or further infiltration to complete the block.

In the postoperative period we also evaluated mobilization of the limb, the need for analgesic therapy and the ability to discharge the patient.

3. Results

Troncular anaesthesia proved to be suitable for this kind of surgery, with a discomfort incidence of about 15% (patients who required sedation or analgesia).

The operation was performed in an average time of 42 min (range 18–72) without any complication (Fig. 1).

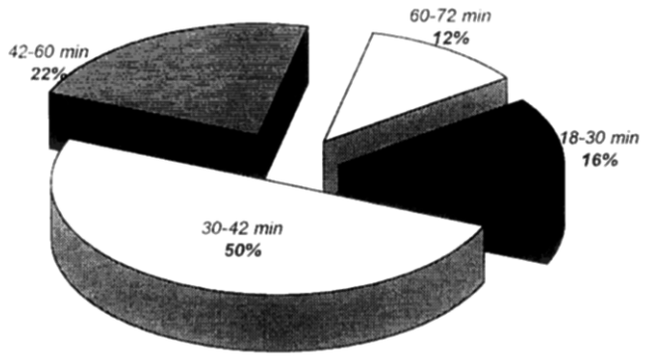

Fig. 1. Operation time.

Only 1 patient (1.5%) required perioperative systemic analgesia, whereas in 12 cases (18%) we preferred to administer propofol by infusion (3–6 mg/kg per h) to reduce the anxious state of the patient.

Anaesthetic block was supported by locoregional infiltration in 9 patients (13.6%), whereas in the remaining 57 cases (86.3%) (Fig. 2) it was adequate.

The dose of local anaesthetic was always lower than the recommended maximum.

Reversion of the monitorial block allowed the patient to walk within 4 h of the beginning of anaesthesia, while analgesia obtained with low concentration of bupivacaine adequately controlled postoperative pain.

In fact at the time of discharge in 58 patients (88%) reversion of block was not associated with pain, while in the remaining 8 (12%) administration of ketorolac 30 mg IM was necessary. Administration of ketorolac 10 mg per OS the night of the operation was recommended.

The method was considered very good by 57 patients (89%), good by 5 patients (7.5%) and poor by 2 patients (3%) (Fig. 3).

The surgeon's rating was very good in 55 cases (83%), good in 8 cases (12%) and poor in 3 cases.

Anaesthetists considered the results very good in 51 patients (77.2%), good in 12 patients (18%), and poor in the remaining three cases.

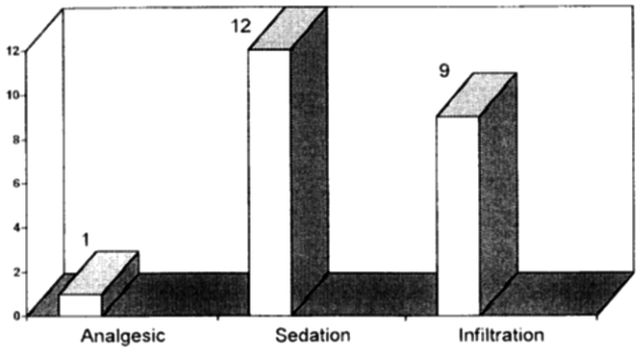

Fig. 2. Patients who needed analgesic, sedation or infiltration to complete the block.

Fig. 3. Methodic approval.

All patients were discharged the same day of their operation.

No complications were observed during the postoperative follow up.

4. Discussion

Several authors suggest different anaesthetic techniques than those used in this study for day surgery [1,2,4,7]. Some prefer variants of subarachnoid anaesthesia to reduce complications [1,2,8–10]. However, critical analysis of these results show that the incidence of complications was 5–10% [1–3] despite the precautions taken (selectivity, small caliber and atraumatic needle).

These complications (headache and back pain) are responsive to antiflogistic and fluid therapy and they are also resolved by bed-rest, but this is clearly against day surgery principles; admitting a patient after day surgery overloads surgical department activity.

Troncular block proved to be the anaesthetic technique of choice in Day Surgery treatment of varicose veins.

It provided adequate analgesia, with complete reversion of anaesthetic effects at the time of discharge; even in the case of the 12 patients who had an intraoperative sedation.

This kind of block, in comparison with central block, gives many advantages: lower instrumental and pharmacological invasiveness, absence of cardiocirculatory complications (hypotension and bradycardia), no involvement of sympathetic block (bladder globus), feasibility with associated infectious diseases, absence of headache and eventually a better acceptance by the patients since only one leg is blocked. Besides, the analgesic effect is more durable than in subarachnoid anaesthesia.

Nevertheless, we must stress that the anaesthetic block, even if facilitated by electroneurostimulation requires about 40 min of preparation time and an effort on the part of the surgical team similar to that required for hospitalized patients.

If we consider the cost, dose, time employed and ease of performance, other anaesthetic methods, particularly subarachnoid anaesthesia, are favourable, but troncular block makes it possible to discharge patients in a very short time thus facilitating day surgery procedures.

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