Rev Bras Anestesiol. 2017;67(1):100–106

Sociedade Brasileira de Anestesiologia

REVISTA BRASILEIRA DE ANESTESIOLOGIA

Publicação Oficial da Sociedade Brasileira de Anestesiologia
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CLINICAL INFORMATION

Ultrasound-guided peripheral nerve blocks in anticoagulated patients – case series

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Received 20 May 2015; accepted 15 June 2015
Available online 26 October 2016

KEYWORDS
Peripheral nerve block;
Ultrasound;
Coagulation

Abstract
Background and objectives: The advent of ultrasound has brought many benefits to peripheral nerve blocks. It includes both safety and effectiveness, given the possibility of visualizing the neurovascular structures and the needle during the procedure. Despite these benefits, there is no consensus in the literature on the use of this technique in anticoagulated patients or with other coagulation disorders. Moreover, peripheral blocks vary in depth, spreadability, and possibility of local compression. However, few societies take it into account when drawing up its recommendations, establishing a single recommendation for performing peripheral blocks, regardless of the route used. The objective of this series is to expand the discussion on peripheral nerve block in anticoagulated patients.
Case reports: This series reports 9 cases of superficial peripheral nerve blocks guided by ultrasound in patients with primary or secondary dyscrasias. All blocks were performed by experienced anesthesiologists in the management of ultrasound, and there was no bruising or neurological injuries in the cases.
Conclusions: This case series support the discussion on conducting surface peripheral nerve blocks and easy local knowledge as the axillary, interscalene, femoral, saphenous or popliteal in anticoagulated patients, on dual antiaggregation therapy and/or with other coagulation disorders, provided that guided by ultrasound and performed by an anesthesiologist with extensive experience in guided nerve blocks. However, larger series should be performed to prove the safety of the technique for these patients.

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http://dx.doi.org/10.1016/j.bjane.2015.06.005

PALAVRAS-CHAVE
Bloqueio nervo periférico;
Ultrassom;
Coagulação

Bloqueios de nervos periféricos guiados por ultrassom em pacientes anticoagulados – série de casos

Resumo
Justificativa e objetivos: O advento da ultrassonografia trouxe inúmeros benefícios para os bloqueios de nervos periféricos. Agregou tanto segurança quanto eficácia, dada a possibilidade de visualização de estruturas neurovasculares e da agulha durante o procedimento. Apesar desses benefícios, não há consenso na literatura sobre o uso da técnica em pacientes anticoagulados ou com outros distúrbios da coagulação. Além disso, os bloqueios periféricos variam com relação à profundidade, expansibilidade e possibilidade de compressão local. Porém, poucas sociedades levam isso em consideração para elaborar suas recomendações, estabelecem um recomendação única para bloqueios periféricos, independentemente da via usada. O objetivo desta série é ampliar a discussão sobre bloqueio de nervos periféricos em pacientes anticoagulados.
Relato de casos: Esta série relata 9 casos de bloqueios de nervos periféricos superficiais guiados por ultrassonografia em pacientes com discrasias primárias ou secundárias. Todos os bloqueios foram feitos por anestesiologistas experientes no manejo do ultrassom, que não foram observados hematomas ou lesões neurológicas nos casos.
Conclusões: A série de casos em questão ajuda a discussão sobre bloqueios periféricos superficiais e de fácil compressão local, como o axilar, interescalênico, femoral, safeno ou poplíteo, em pacientes anticoagulados, duplamente antiagregados e/ou com outros distúrbios da coagulação desde que guiados por ultrassom e feitos por anestesiologista com vasta experiência em bloqueios guiados. Entretanto, maiores séries devem ser feitas para comprovar a segurança da técnica para esses pacientes.

Introduction

The use of ultrasound is increasingly present in the everyday life of anesthesiologists. It is used for deep vein puncture, peripheral block or even for neuraxial nerve blocks. The introduction of ultrasound has come to add safety, effectiveness, and success to surgical procedures.[1]

Some benefits of this technique over neurostimulation have been demonstrated in the literature. Among these, we highlight lower incidence of failure, less time to perform, shorter latency, prolonged blockade, and lower risk of accidental vascular puncture.[2–10] Less likely to promote vascular lesions, ultrasound is an interesting tool to guide peripheral nerve blocks, particularly in patients on anticoagulants or with coagulation disorders, which impose certain challenges for regional anesthesia due to the risk of bleeding complications in case of vascular injury, especially at sites that hinder vessel compression.[11]

Despite the benefits mentioned, there is no consensus in the literature regarding the indication of ultrasound-guided peripheral nerve blocks in patients with bleeding disorders. Despite the popularization and development of this technique, there are few cases described in the literature with the use of ultrasound in this type of patient.[12]

Below, we present a series of cases in which sciatic, femoral, and brachial plexus nerve blocks guided by ultrasound were performed in anticoagulated patients, double aggregated or with other coagulation disorders were performed.

Case reports

See Table 1.

Case 1

SRR, female, 63 years old, ASA 3, history of systemic hypertension, chronic renal failure in conservative treatment, and type 2 diabetes mellitus. The patient was taken piperacillin–tazobactam due to severe focal sepsis on right lower limb, scheduled for transtibial amputation. She was also taken aspirin 100 mg day^{-1}, clopidogrel 75 mg day^{-1}, unfractionated heparin 5000 U 8/8 h, simvastatin 20 mg day^{-1}, enalapril 20 mg 12/12 h, glibenclamide 5 mg 2× day, and metformin 850 mg 2× day.

Surgical schedule

Right transtibial amputation.

Proposed anesthesia

Ultrasound-guided femoral and sciatic nerve blocks and electrical nerve stimulator.