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Case report

HYPERSENSITIVITY TO LIGNOCAINE: A CASE REPORT

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ABSTRACT

Local anaesthetics are a very important group of drugs in the anaesthetists' armamentarium. They have very widespread use in many branches like surgery, Orthopaedics, ENT, Obstetrics & Gynaecology. Most popular amide group representative – lignocaine – is used as its hydrochloride salt at a concentration of 1 or 2% with or without epinephrine. Though hypersensitivity reactions are rare, they may occur and varies from life threatening anaphylaxis to less severe delayed type reactions. Here we are reporting a case of delayed type 4 reaction to lignocaine after supraclavicular brachial plexus block which was managed conservatively.

Keywords: Lignocaine, Local anaesthetics, Type 4 hypersensitivity, Supraclavicular brachial plexus block

INTRODUCTION

Local anaesthetics have been very widely used since the discovery of the anaesthetic effect of cocaine in 1884. In spite of their widespread use, true hypersensitivity appears to be infrequent. Most of the adverse reactions are due to pharmacologic or toxic effects of local anaesthetics. While type 1 hypersensitivity reactions to lignocaine are uncommon, type 4 hypersensitivity is reported even less frequently[1]. Here we report a case of a patient with no history of allergy to local anaesthetics, which developed an allergic reaction after exposure to preservative free lignocaine.

CASE REPORT

A 45 –year-old male presented for implant removal from lower third of humerus. He underwent surgery for fracture lower third of humerus about a year back under GA which was uneventful. This time as it was decided for a day care surgery anaesthetic plan was supraclavicular brachial plexus block. He had no previous history of allergic reactions to food or drugs and was not on any medications. After obtaining informed written consent supraclavicular brachial plexus block was administered with 1% 30 ml lignocaine with 1:2,00,000 adrenaline.

That formulation was preservative free. After the block was established surgery was allowed to proceed. Intra operatively he did not receive any other medication and the surgery was uneventful. Though the procedure was planned as day -care but he was not discharged on-request and admitted. Next day he complained of itching and rashes in the neck. On examination we found severe urticarial rashes in the neck and chest extending to sternum on the side where block was administered (Fig 1). He was treated conservatively with anti histaminics and was discharged on symptomatic relief.

Fig 1: Urticarial rashes on the neck and chest after supraclavicular brachial plexus block with lignocaine

DISCUSSION

Local anaesthetics have traditionally been divided into 2 groups according to their chemical structure: esters and amides[2]. Allergic reactions of local anaesthetics are extremely rare (less than 1%) [3]. Aminoesters such as procaine may produce allergic-type reactions more commonly than aminoamides. Even with aminoesters, the vast majority of reactions are not allergic. Aminoesters, unlike aminoamides, are derivatives of *p*-aminobenzoic acid (PABA), which is known to be allergenic. Allergy to local anaesthetics may be type 1 immediate hypersensitivity reaction mediated by IgE antibodies or type 4 delayed hypersensitivity mediated by lymphocytes.

Lignocaine (Lidocaine, Xylocaine) is an aminoamide type of local anaesthetic agent. It is probably the most widely used local anaesthetic agent not only as a topical and injectable anaesthetic, but also intravenously in the treatment of cardiac arrhythmias. Despite its widespread use adverse reactions to lignocaine are uncommon. Most reactions are type 1 immediate hypersensitivity[1]. There are few published cases of type 4 delayed hypersensitivity. It is likely that many cases are not recognized. On January 1, 2001, the North American Contact Dermatitis Group (NACDG) added this antigen to their standard tray to assess the frequency of sensitivity to lignocaine[1].

Adverse reactions to lidocaine and others LAs are extremely rare and less than 1% of adverse reactions caused by local anaesthetic drugs are due to be true allergy. There are a few cases reported in literature in which the patient had developed a type 4 hypersensitivity reaction to injection of lignocaine.

Bircher et al[4]reported a patient with localized swelling 24 hours after dental surgery with patch test showing lignocaine sensitivity.

Whalen[5] reported a patient with localized, pruritic, vesiculobullous delayed type hypersensitivity reaction on the dorsum of the hand 12 hrs after lignocaine injection. Patch test confirmed it.

Briet et al[6] described a man who developed pruritus, swelling erythema at lignocaine injection sites. Results from prick and intradermal tests were negative at 20 minutes, but intradermal test results were positive at 48 hours; thus indicating type 4 hypersensitivity.

Downs AMR et al[7] described one patient having immediate hypersensitivity to lignocaine during an injection for a dental procedure, but patch test revealed delayed type of hypersensitivity.

Christine L. Mackley et al[1] patch tested 183 patients and all those who were positive to lignocaine were challenged with 0.1 ml preservative free 1% lignocaine intradermally. Four cases had positive reaction to lignocaine.

They concluded that delayed type hypersensitivity to lignocaine may occur more frequently than previously thought and given its frequent use, may become widespread.

Duque et al[8] described a woman who suffered eczematous eruption on her face after the administration of lignocaine and mepivacaine for dental surgery. Patch test showed delayed type hypersensitivity to amide local anaesthetics lignocaine and mepivacaine.

In our case the patient received preservative free 1% lignocaine with adrenaline (1:2, 00,000) for supraclavicular brachial plexus block. The intraoperative and immediate postoperative period was uneventful. The patient developed itching and subsequently skin rashes about 16 to 20 hours after administration of Local anaesthetic. It was diagnosed as urticarial rashes and the patient was treated conservatively with anti allergic medications as soon as the rashes were reported. Patient was advised patch test for lignocaine for further evaluation; which he refused. So we could not proceed for further testing. On clinical grounds it is assumed to be because of hypersensitivity to lignocaine. We suspected lignocaine to be the cause because the preparation was preservative free and no other drug or sedative were used to supplement the block. Adrenaline as causative agent was ruled out because the reaction was localized and also delayed. On further enquiring it was found that the patient had no history of exposure to Local anaesthetics or allergy to any drug or substance. Moreover he underwent surgery for once only before this, for putting the implant which he underwent under general anaesthesia without the use of local anaesthetic.

After ruling out other probable causes of allergy we came to conclusion that the reaction was a true hypersensitivity to lignocaine as the formulation we used was preservative free. We finally conclude with a note that allergic reactions to local anaesthetics though rare can occur in clinical situations in our day to day practice to anyone of us and given its widespread use the incidence is likely to increase. So it is better to be aware of these adverse reactions and be prepared for any untoward incident that may occur during simplest of procedures.

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