NIPPLE VASOSPASM -

A MANIFESTATION OF RAYNAUD'S PHENOMENON AND A PREVENTABLE CAUSE OF BREASTFEEDING FAILURE

Nipple vasospasm was first described by Mavis Gunther in 1970 as "psychosomatic sore nipples"[1]. She stated "When the nipples are being examined they blanch, usually the whole face going white because of the shutting down of the blood supply. Sometimes, while they are still being inspected, the blood supply is restored and the nipples can be watched becoming a mulberry colour. The mother who has this very real trouble usually has some fear or unhappy association connected with breasts or breastfeeding". It was in 1992 that it was first suggested that nipple vasospasm may represent a variant of Raynaud's phenomenon [2]. Five detailed cases of Raynaud's phenomenon affecting the nipples of breastfeeding women have recently been published [3].

RAYNAUD'S PHENOMENON

Raynaud's phenomenon is a term used to describe intermittent ischaemia secondary to vasospasm. Primary Raynaud's phenomenon is Raynaud's phenomenon when there is no known underlying aetiology. Secondary Raynaud's phenomenon refers to Raynaud's phenomenon where there is an underlying autoimmune or connective tissue aetiology such as SLE or Rheumatoid Arthritis[4].

Raynaud's phenomenon is classically described as affecting the acral parts of the body, most commonly the digits of the hands or feet. It is now clear, however, that the vasospasm of Raynaud's phenomenon may affect coronary [5], pulmonary [6], ocular [7], gastrointestinal [8], penile [9] and placental [10] vasculatures. Furthermore the reported association between Raynaud's phenomenon and migraine suggests involvement of the cerebral circulation [11].

It is a common condition affecting women of childbearing age with up to 22% of 21-50 year olds reporting symptoms. [12] It is likely therefore to be an underdiagnosed condition affecting the nipples of lactating women.

Classically there is a triphasic colour change associated with Raynaud"s phenomenon. Firstly there is pallor induced by vasopasm and then cyanosis caused by deoxygenation of pooled venous blood. Finally there is rubor associated with reflex vasodilatation [4] The triphasic colour change occurs in two thirds of patients with Raynaud's phenomenon [13] .

The signs of vasospasm may be accompanied by symptoms of numbness, burning, tingling [14] and of course pain. It is pain that causes distress to the breastfeeding woman and will precipitate her presentation for help.

Attacks of vasospasm may be induced by cold exposure or by emotional stress [15].

Gunther as early as 1970 therefore very accurately described Raynaud's phenomenon in the nipples of lactating women depicting 2 out of the three associated colour changes and the link with emotional stress.

ASSESSMENT

The most common cause of nipple pain is said to be poor positioning of the baby at the breast or poor attachment of the baby to the breast [16]. Poor positioning and attachment may also be associated with blanching of the nipple due to mechanical compression. It is therefore likely that poor positioning and attachment may be misdiagnosed as vasospasm. A history of symptoms and signs between feeds, precipitation by cold stimulus and biphasic or triphasic colour change should therefore be sought when considering a diagnosis of nipple vasospasm. Furthermore positioning and attachment should be critically assessed and should be excluded as the cause of the presenting problem.

MANAGEMENT

The management of Raynaud's phenomenon in the lactating woman is limited by the need to ensure the safety of any treatment not only for herself but also for her breastfeeding infant.

Avoiding cold stress is the mainstay of treatment of Raynaud's phenomenon. It is of interest that not only the affected part but the whole body needs to be kept warm to avoid reflex sympathetic vasoconstriction [17] . Patients should therefore be advised to breastfeed in a warm environment, to wear warm clothing and to avoid cold exposure at all times. Once painful vasospasm has occurred warming the nipples (for example by using warm compresses) may be helpful.

Smoking should be avoided in patients with Raynaud's phenomenon. Smoking as little as two cigarettes per day has been shown to increase vascular resistance by 100% and decrease cutaneous blood flow by 40% [14]. Smoking may therefore potentiate Raynaud's phenomenon.

Caffeine may exacerbate Raynaud's phenomenon in some patients and should therefore be avoided. Although it is a vasodilator, its use may be associated with rebound vasoconstriction through central mechanisms thereby precipitating symptoms of Raynaud's phenomenon [18].

Moderate aerobic exercise has been shown to be of benefit in Raynaud's phenomenon and may be worth a trial in the breastfeeding patient [14].

Biofeedback techniques [19] have also been shown to be of use in the treatment of Raynaud's phenomenon affecting the digits of the hands or feet. This would presumably be applicable for nipple vasospasm.

The use of calcium (2000mg per day) and magnesium (1000mg per day) has been reported anecdotally as a treatment for nipple vasospasm [20] . There is no scientific evidence to date however to support the efficacy of this regimen.

Evening primrose oil [21] and fish oil [22] have individually been found to be of benefit to patients with primary Raynaud's phenomenon. Both agents are certainly safe for the lactating woman and her baby.

However large doses of these agents are required to improve symptoms - 12 capsules per day of evening primrose oil equivalent to 540mgs of gamma linoleic acid or 12 fish oil capsules per day equivalent to 3.96gms of eicosapentanoic acid and 2.64gms of docosahexanoic acid. Furthermore it takes 6 weeks to get any significant clinical response with either of these agents and they are therefore not useful in the short term. A lactating woman presenting with acute nipple pain secondary to vasospasm is therefore likely to require more immediate relief at least in the interim.

Of all drugs investigated thus far for the treatment of Raynaud's phenomenon, nifedipine, a calcium channel blocker of the dihydropyridine group has been the most effective [23]. In primary Raynaud's' phenomenon nifedipine is associated with reductions in attack frequency between 50 and 91%[24,25,26]. When given to a lactating woman less than 5% of the total dose of nifedipine appears in her breast milk [27]. The administration of nifedipine does not alter breast milk composition. [27]. Treating a breastfeeding woman with nifedipine therefore appears to pose no risk to her infant.

Nifedipine appears therefore to be a safe and rational choice for the treatment of Raynaud's phenomenon affecting the nipples of lactating women. The successful use of nifedipine in treating this condition has recently been described in five breastfeeding patients [28].

Side effects to nifedipine are said to occur in approximately one third of patients and are usually secondary to peripheral vasodilatation. These may include headache, flushing, dizziness, reflex tachycardia and peripheral oedema [15]. Side effects may be minimised by either starting at a small dose such as 5mg three times per day and slowly increasing until an optimal clinical response is achieved [15] or by using a slow release preparation to avoid the peak blood levels associated with standard therapy [4]. Side effects occurred in three of five breastfeeding patients treated for nipple vasospasm. Side effects settled in one patient spontaneously and in the remaining two with a change in dose. [28].

SUMMARY

Nipple pain is the most common complaint amongst breastfeeding women and is the second most common reason given for abandoning breastfeeding exceeded only by perceived low milk supply [29].

Painful nipple vasospasm in the breastfeeding woman therefore poses the dual problems of distressing symptomatology combined with the increased risk that breastfeeding will be abandoned early.

The most common cause of nipple pain is poor positioning of the baby at the breast or poor attachment of the baby to the breast. Poor positioning and attachment may also be associated with blanching of the nipple secondary to mechanical compression. Poor positioning and attachment must therefore be excluded as a cause prior to considering a diagnosis of vasospasm.

Precipitation of symptoms by cold stimulus and triphasic colour change (white, blue, red) are features supporting a diagnosis of nipple vasospasm.

There are a range of management strategies which are safe for both the breastfeeding woman and her infant. Fish-oil and evening primrose oil have both been shown to be useful in the management of Raynaud's phenomenon. However large doses and a minimum of 6 weeks' treatment are required to achieve a significant reduction in symptomatology.

Nifedipine has proven efficacy in the treatment of Raynaud's phenomenon and appears to be safe for both the breastfeeding woman and her infant.

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