

Case Reports

# Decompression illness presenting as breast pain.

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Trevett AJ, Sheehan C, Forbes R. Decompression illness presenting as breast pain. *Undersea Hyperb Med* 2006; 33(2):77-79. We present two cases of decompression illness in women in whom the initial symptom causing distress after completion of the dives was breast pain. Both women were also subsequently found to have a patent foramen ovale. We postulate that breast pain may be an unusual under-recognized manifestation of decompression illness.

## INTRODUCTION

We present two cases of decompression illness in women. In both cases the initial symptom causing distress after completion of the dives was breast pain. Neither woman made an initial association between their breast symptoms and the possibility of decompression illness. We postulate that breast pain may be an under-recognized unusual manifestation of decompression illness.

### Case 1

A 34-year-old female presented 90 minutes after completing the first dive of her holiday. She had completed a 32 minute dive to a maximum depth of 39 metres on air. The profile of the dive was unremarkable with a slow ascent and she completed decompression stops for three minutes at six and two minutes at three metres. 45-60 minutes after surfacing she

started to experience bilateral breast discomfort. The pain failed to resolve and was followed by itching in her epigastrium and itching and pain in the right shoulder, at which point she sought medical advice. On examination she had bilateral breast tenderness and an obvious marbling rash in her epigastrium consistent with cutis marmorata. Clinical examination was otherwise unremarkable. Her only medication was the progesterone only contraceptive pill. A diagnosis of decompression illness was made and she was treated with oxygen recompression using a standard United States Navy Treatment Table 6. The treatment commenced approximately one and a half hours after the onset of symptoms. Within minutes of recompression to 18 metres, her breast pain and rash resolved. Following completion of the treatment she was asymptomatic and examination was normal. On further questioning she recalled two previous episodes in which she had experience severe bilateral breast discomfort after completing non-

decompression dives. She had not been aware of a rash. On each occasion she had attributed her symptoms to the physical restriction of her dry suit or trauma from clambering into the dive boat. On one occasion the pain had been of such severity that she was unable to tolerate a car seat belt during the drive back from a dive. Following her treatment, she was referred for further investigation. A trans-oesophageal echocardiogram demonstrated a significant patent foramen ovale, present at rest.

## **Case 2**

A 29-year-old female presented on the second day of her diving holiday in Orkney. She had arrived in Orkney two days after arriving home from a weeks diving in the West Indies. About 60 minutes after completing her third dive she developed bilateral breast discomfort which she described as a highly unpleasant sensation of sufficient severity that she was unable to tolerate her bra. She had just completed a 42 minute dive, using air as her breathing gas, to a maximum depth of 38 metres. The profile of the dive was unremarkable with a slow ascent and 7 minute safety stop at 4 metres. On the preceding day she had completed two dives, one of 41 minutes to a maximum depth of 24.7 metres and one of 49 minutes to a maximum depth of 18.3 metres. She had no unusual symptoms after either. She was given oxygen on the dive boat and referred for a medical opinion. On examination she had marked bilateral breast tenderness but no evidence of edema, skin changes or breast lumps. Physical examination was otherwise unremarkable. Her only medication was the combined oral contraceptive pill. She was diagnosed as having decompression illness and treated with recompression using USN Table 6. The treatment was started approximately two and a half hours after the onset of symptoms. Her breast pain completely resolved soon after recompression to 18 metres. She was

asymptomatic after treatment. She was referred for further investigation. A transoesophageal echocardiogram showed evidence of a significant patent foramen ovale with a diameter of 7mm.

## **DISCUSSION**

Decompression illness has protean manifestations. The most common presentations are with joint pain, sensory or motor abnormalities, skin rashes and vestibular dysfunction (1). A small number of reports describe involvement of lymph nodes and localised lymphoedema, including a peau d'orange rash, presumably secondary to involvement of cutaneous lymphatic vessels and swelling around the neck and axillae (2). We are not aware of any previous published accounts of decompression illness presenting as breast pain. We have not seen any similar cases in our experience of treating more than 200 cases of decompression illness. Both women described in this report presented specifically with breast pain. Both were diving in their usual dry suits and neither reported any unusual trauma on the day of their dive nor had any history of previous breast surgery.

The presence of a diagnostic cutis marmorata rash in case 1 confirms a definite diagnosis of DCI, in case 2, the rapid resolution of symptoms on recompression is highly suggestive that the diagnosis was correct. Both women received what might be regarded as undeserved decompression illness despite unremarkable dives with appropriate decompression stops. Both women were subsequently shown to have significant patent foramen ovale, known to be associated with an increased risk of some presentations of decompression illness (3, 4). It is impossible to prove that the breast symptoms in either patient were definitely due to decompression illness; however it is plausible that nitrogen bubbles

causing lymphatic obstruction in breast tissue might be the mechanism of the presentation. Nitrogen bubbles have been demonstrated in lymph taken from the thoracic duct of dogs following decompression (5). It is also plausible that constriction of breast tissue in a tight dry suit, by restricting lymph flow, might make this presentation more likely. If true, then one might anticipate a rapid resolution of symptoms on recompression as occurred in both women. We believe that decompression illness should be considered as a possible diagnosis in women presenting with breast pain after diving.

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