ble (most injuries resulting from pivoting and landing movements). It seems reasonable to assume that the prevention programme also could be modified for these sports. We also suggest that programmes focusing on technique (cutting and landing movements) and balance training (on wobble boards, mats or similar equipments) are implemented in players as young as 10-12 years, before they have established their motion patterns.

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Reproduction of chest pain by palpation: diagnostic accuracy in suspected pulmonary embolism

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Introduction

Chest pain associated with pulmonary embolism is usually sharp and worsens with deep inspiration, cough, and movement, resulting from pleural inflammation in peripheral emboli (pleuritic pain).[1] Conversely, chest pain that is reproduced by palpation is thought to be caused by pathology of the musculoskeletal chest wall and may prompt clinicians to discard pulmonary embolism as the cause, although cases of pulmonary embolism with isolated pain in the chest wall have been described.[2] Managing patients with chest pain is challenging because signs and symptoms of pulmonary embolism lack specificity, because it requires ruling out other life threatening conditions, and because a sizeable proportion of patients have musculoskeletal or pleural syndromes that require symptomatic treatment only.[3] We assessed whether chest pain that can be reproduced by palpation is likely to be more indicative of an absence of pulmonary embolism than chest pain caused by breathing, cough, or movement.

Participants, methods, and results

We analysed a database of consecutive outpatients included in a prospective management study that was designed to validate a diagnostic strategy for suspected pulmonary embolism.[4] Suspicion of pulmonary embolism was defined as acute onset of new or worsening shortness of breath or chest pain without another obvious aetiology. The study took place in Geneva and Lausanne University Hospitals, Switzerland, and Angers University Hospital, France, between October 2000 and June 2002. Exclusion criteria (n = 258) were ongoing treatment with coagulants, allergy to contrast iodine agents, creatinine clearance below 30 ml/minute, pregnancy, and life expectancy of less than three months. All patients gave informed consent. Before any test, the doctors in charge used eight variables to assess patients in the emergency ward on the basis of a validated prediction rule (the Geneva score): recent surgery, previous thromboembolism, age, hypocapnia, hypoxaemia, tachycardia, band atelectasis, and hemidiaphragm elevation on chest x ray.[5] The doctors completed a standardised data form. Chest pain was recorded, and doctors were asked to specify whether or not it was reproduced by palpation.

Prevalence of pulmonary embolism according to the presence of reproducible chest pain

	Pulmonary embolism (n=222)	No pulmonary embolism (n=743)
Chest pain reproduced by palpation (n=191)	38	153
No chest pain reproduced by palpation (n=774)	184	590

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Pulmonary embolism was ruled out if the patient's D-dimer concentration was below 500 µg/l or if proximal venous ultrasonography and helical computed tomography were both negative. In patients with a high clinical probability of pulmonary embolism, a negative pulmonary angiogram was also required. Follow up of patients was at three months. We used a χ^2 test to compare the proportion of confirmed pulmonary embolism in patients with and without chest pain that could be reproduced by palpation.

The average age of the 965 included patients was 61 (SD 19) years; 562 (58%) were women. A negative D-dimer test ruled out pulmonary embolism in 280 patients (29%). The overall prevalence of pulmonary embolism was 23% (222 of 965 patients). The prevalence was not significantly lower in patients with pain reproduced by palpation (19.9% (38/191) *v* 23.8% (184/774), P = 0.25; table). The sensitivity and specificity of reproducible chest pain for the diagnosis of pulmonary embolism were 17% (95% confidence interval 13 to 23) and 79% (76 to 82); positive and negative likelihood ratios were 0.83 (0.60 to 1.14) and 1.04 (0.97 to 1.12).

Comment

In patients with suspected pulmonary embolism, chest pain reproduced by palpation is not associated with a lower prevalence of pulmonary embolism. Limitations of our findings are the absence of a standardised definition and evaluation method for eliciting chest pain by palpation. Moreover, these results may not apply to all patients with chest pain, as many patients in the emergency department may have been classified as having another obvious aetiology and were not included in the study.

Elicitation of chest pain is widely used by doctors to assess the clinical likelihood of pulmonary embolism. However, in patients without an obvious aetiology, pain in the chest that is reproduced by palpation is not associated with a lower prevalence of pulmonary embolism. Physicians should take into account that the usefulness of these widespread semiologic descriptions may be limited in this situation.

What is already known on this topic

Chest pain that is reproduced by palpation is classically thought to be caused by pathology of the musculoskeletal chest wall and may prompt clinicians to discard pulmonary embolism as the cause of pain

The diagnostic accuracy of this clinical criterion is unknown

What this study adds

In patients in whom pulmonary embolism is suspected, chest pain that is reproduced by palpation is not associated with a lower prevalence of pulmonary embolism

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Two consultations

When I was 14 years old my mother took me to see a doctor about some skin lesions on my face and neck. The doctor was reputed to be one of the best in town. At his clinic, we paid the consultation fee and waited in a queue, with about 10 before us waiting to see him. After about 20 minutes, somebody called out my name and asked us to enter the doctor's room. During the check up, I explained all my problems to him. He examined my lesions through a magnifying glass, quickly wrote down a prescription of drugs, and, handing it to us, asked us to come for follow up after a week. It hardly took a minute for him to see us off.

I had not expected such a short consultation and felt he hadn't given me enough time to explain about my problems and treatment in details. Though he gave me a prescription, he failed to give me any assurances or encouragement. I know my mother felt the same, though neither of us spoke a word on our way back home. I used the drugs that he had prescribed, and they cured my problem. But I never went back to him for follow up.

About a year ago, I accompanied my sick mother to another doctor for a very different consultation. Firstly, my mother explained all her problems in detail. The doctor listened carefully, and, after thoroughly examining her, he told us all about the disease she had and the treatment he was going to give. Finally, he asked her if she understood everything. My mother nodded happily. I could see from her face how happy and relieved she felt after this consultation.

Now I am in my final year at medical school. Looking back at those two consultations, I think they epitomise bad and good doctor-patient relationships. I see many patients daily; as a student, I can't give them anything but assurances, encouragement, hope, and my time to listen to their grievances. I know it helps them. I also see my teachers examining patients: some patients return happily after check up, whereas some look dissatisfied when they feel that the doctor hasn't given them enough time to explain all about their illness and treatment. This reinforces my belief that the best management strategy for a patient can be made even stronger when laid on a strong foundation of a good doctor-patient relationship.

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