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SHORT REPORTS

Unilateral sacroiliac overuse syndrome in military recruits

Although sacroiliac strain is frequently diagnosed, objective evidence of such a disorder is generally lacking and the whole subject is controversial. We report four soldiers who developed pain in the sacroiliac region after excessive physical activity with abnormal scintigrams which resolved when the symptoms improved.

Patients, methods, and results

A large group of highly motivated military recruits were evaluated in a prospective study of stress fractures. All soldiers had an evaluation before and after training and were followed throughout this. The soldiers had free access to the medical staff as well as mandatory three week check ups and were followed until the resolution of any orthopaedic problem. Soldiers with symptoms compatible with stress fractures were given three days' rest and if they still had symptoms on return to activity stress fractures were diagnosed on the basis of Tc⁹⁹ MDP late phase scintigraphy, with the activity rated from 1 to 4. The scan was repeated when clinically indicated.

Four soldiers in this study presented with unilateral pain in their sacroiliac region (table). The pain was proportional to effort, relieved by rest, and did not respond to treatment with non-steroidal anti-inflammatory drugs by immediate relief. All the symptomatic sacroiliac joints were tender to direct palpation of the area and showed positive Gaenslen tests. There was no limitation of the range of motion in the lower back of the four soldiers. The results of blood and urine analysis were normal, including tests for rheumatoid factor and HLA-B27, as were x ray films taken near to the time of the onset of the pain and after relief. None of the soldiers had had lower back complaints or pain in the region of the sacroiliac joint before army training and after a period of rest all returned to normal activity, in cases 3 and 4 as combat soldiers and the rest in less demanding duties.

Comment

The existence of sacroiliac strain is doubted.^{1,2} Cyriax states that it occurs only in women between the ages of 15 and 35 and may be differentiated from arthritis spondylitis, in which the pain comes and

goes independently of exertion and is often bilateral.¹ By contrast, the pain of sacroiliac stress is evoked by exertion, avoided by resting, never alternates, and is always unilateral.

To identify true sacroiliac pain requires proper physical examination because most "sacroiliac pains" are referred pains from irritation of the nerve roots and should properly be called gluteal pains. Finding a tender spot "over the joint" is misleading. The joint is in fact far from the palpable posterior iliac border. The key to diagnosis is exerting tension on the sacroiliac joint without affecting the lumbar spine (for example, Gaenslen test).

Relying on scintigraphy to confirm clinical suspicion of sacroiliac strain has many problems. A high proportion of false positive results has been reported from using this technique in evaluating sacroiliitis.³⁻⁵ Ayres *et al* point out that many of these "false" positives actually reflect lesions. It is known that patients with abnormal postural loads on their sacroiliac joints may show increased activity, as also occurs in metastatic cancer and Hodgkin's disease and in patients with renal transplants and some patients with lower back pain.

We conclude that the four patients we describe with unilateral sacroiliac pain and corresponding scintigraphic findings represent an overuse strain syndrome of the sacroiliac joint. Supporting this conclusion are the following: (a) the scintigraphic findings resolved simultaneously with the resolution of the pain; (b) the extreme intensity of the unilateral sacroiliac activity on these scans; (c) the results of clinical examination were consistent with pain from sacroiliac origin; (d) the fact that the pain was proportional to exertion and relieved by rest, and was unilateral; (e) the normal results from laboratory investigations; (f) the fact that no other soldier in the study group, in which 181 soldiers had bone scans, had abnormal sacroiliac activity.

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Features in case histories

Case No	Age	Sacroiliac joint pain history (days)	Weeks of training before onset of pain	Side of sacroiliac joint pain	Other stress fractures during training course	**Tc scan hot spot at time of pain	Rest period (weeks)	Pain after rest	Repeated **Tc scan after rest	Assignment of duty
1	18	17	5	R	R proximal femur	R sacroiliac joint R proximal femur	8	Relieved nagging pain	Total sacroiliac resolution	Less demanding duty
2	18	21	3	R		R sacroiliac joint	16	Relieved	Total sacroiliac resolution	Less demanding duty
3	20	14	2	R	R tibia, R and l femurs	R sacroiliac joint, R tibia (two foci) Distal femurs	3	Relieved	Considerable sacroiliac resolution after eight weeks	Combat soldier
4	18	28	20	R	12 stress fractures in pubic bones and legs	11 hot spots	3 (partial rest)	Relieved	Total sacroiliac resolution	Combat soldier

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Fatal overdose of phenylpropanolamine

Considerable interest has recently been expressed in the medical, pharmaceutical, and lay press, about the toxicity of proprietary cold cure preparations containing phenylpropanolamine available "over the counter." Side effects and morbidity from drugs containing phenylpropanolamine are fairly common,¹ but only five deaths have been reported,^{2,3} although the manufacturer of one preparation containing phenylpropanolamine knows of two others (Menley and James, USA, data on file). In two of the reported cases death occurred three and five days after ingestion of the drug and the patients showed clinical and necropsy features of the adult respiratory distress syndrome.

Case report

A 15 year old previously healthy girl admitted to having taken eight or nine capsules of Contac 400 (phenylpropanolamine 50 mg and belladonna alkaloids 0.2 mg in a sustained release preparation) at one time as a deliberate overdose. On admission to hospital some six hours later she was drowsy but rousable and cooperative. Blood pressure was 160/120 mm Hg (phase V) and pulse 140/min regular. She had a harsh grade III/VI systolic ejection murmur at the left sternal edge, which was not radiating. She did not have cardiac failure, and her general condition was satisfactory. Gastric lavage did not yield recognisable drug fragments. Serum potassium concentration was 3.3 mmol(mEq)/l; urea and other electrolyte concentrations were normal. Her urine was normal on admission but subsequently showed a transient 2% glycosuria with a plasma glucose concentration of 12.3 mmol/l (220 mg/100 ml).

Her sinus tachycardia persisted (100-140 beats/minute), but her blood pressure settled to 130-140/80-90 mm Hg. Her condition did not give rise to undue concern until about 30 hours after ingestion of the drug, when she developed increasing breathlessness, frothy haemoptysis, persistent tachycardia, and bilateral crepitations at both lung bases. There was no right heart failure. Chest x ray examination showed diffuse bilateral pulmonary infiltrates. She was given frusemide 40 mg intravenously and orally, and because her tachycardia was thought to be due in part to excess sympathomimetic drive she received a single oral dose of metoprolol 50 mg.

One hour later she collapsed with an unrecordable blood pressure and persistent sinus tachycardia. Endotracheal intubation was followed by intermittent positive pressure ventilation, and despite continuing hypotension 2-3 cm positive end expiratory pressure was later introduced because of persistent pulmonary oedema. She became anuric and did not respond to further intravenous frusemide, dobutamine, or large doses of methylprednisolone. There was no evidence of gastrointestinal haemorrhage, and a coagulation screen excluded disseminated intravascular coagulation. Intensive resuscitative activity was continued for four hours, carotid and femoral pulsation being easily maintained. Brain death was confirmed in the usual way before resuscitation was finally abandoned.

At necropsy there was no macroscopic abnormality of the heart. The lungs were very congested with increased capillary wall permeability and features compatible with early adult respiratory distress syndrome. A toxicological screen on blood removed shortly before death did not show evidence of any other ingested drugs, and indeed did not detect any circulating phenylpropanolamine.

Comment

Phenylpropanolamine is chemically similar to amphetamine and ephedrine. Adverse effects include hypertensive crises, cerebrovascular

accidents, seizures, psychotic and other reactions similar to those induced by amphetamine, acute renal failure, myocardial damage, and cardiac arrhythmias. The potential for interaction with other drugs such as antihypertensives and monoamine oxidase inhibitors needs emphasis.³ Side effects have arisen both from therapeutic doses of drugs containing phenylpropanolamine and from quite small overdoses.

The fact that this patient's collapse was delayed until some 32 hours after ingestion of the drug and that two of the five other reported deaths occurred after an even longer delay,^{4,5} together with the pathological features of these three cases, suggests that the adult respiratory distress syndrome was responsible. Physicians should be aware that the syndrome may develop after quite small overdoses of drugs containing phenylpropanolamine. If appropriate treatment had been introduced in this previously healthy young woman at an earlier stage death might have been avoided.

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Treatment of septic arthritis due to *Mycobacterium kansasii*

Septic arthritis due to atypical mycobacteria is rare and frequently eludes diagnosis; moreover, there are no clear guidelines for treatment.

Case report

A 39 year old Cambridgeshire man presented with pain in the right knee for six months. He remembered no specific injury but had sustained several minor injuries in the past when playing football. Examination showed tenderness on the medial aspect of the knee but no effusion. He failed to respond to conservative treatment and an arthroscopic biopsy specimen showed non-specific synovitis. His symptoms persisted and six months later he developed an effusion and was reinvestigated. Blood count, sedimentation rate, liver function tests, and a knee radiograph were normal. Clear fluid was aspirated from the joint; normal cultures of this were sterile, but tubercle cultures grew a heavy growth of *Mycobacterium kansasii*. The strain was sensitive to rifampicin, ethambutol, ethionamide, capreomycin, thiacetazone, and cycloserine; moderately sensitive to streptomycin; and resistant to isoniazid and para-aminosalicylic acid. The diagnosis was confirmed by repeat culture. A careful review of the original synovial biopsy specimen showed giant cell granulomata, confirming that infection was present before arthroscopy.

One year previously a routine chest radiograph had shown localised emphysematous changes in the right upper zone. No evidence of pulmonary infection was found and subsequent radiographs remained unchanged. Treatment was started with ethambutol 900 mg daily and Rifinah (rifampicin/isoniazid) 600 mg daily. His progress was monitored both clinically and thermographically. After one month the results of these two procedures had not altered so pyrazinamide 2 g daily was added. A month later there was definite improvement. Four months after starting treatment he suddenly became jaundiced, so treatment was discontinued. A liver biopsy specimen showed non-specific inflammatory changes. His liver function tests returned to normal during the next four months. One year after the treatment was stopped there was no clinical or thermographic evidence of joint inflammation and he had returned to playing football.

Comment

This report underlines the importance of considering atypical mycobacterial infection in a patient with monoarticular arthritis. As in this case the diagnosis was made by culturing joint aspirate,