Polar Acupuncture

John Apps

Summary
Musculoskeletal disorders are common in people who undertake adventure travel to the Antarctic, and in those who support them, because of the hard physical demands and lack of rest. This paper describes the successful use of acupuncture as first line treatment for ten patients in these circumstances, and comments on its advantages, particularly in its capacity to reduce the use of non-steroidal anti-inflammatory drugs.

Keywords
Acupuncture, Arctic, musculoskeletal disorders.

Background
Adventure travel is increasing, and some participants will inevitably develop musculoskeletal problems, especially in polar environments. Patriot Hills camp in Antarctica is operated by Antarctic Logistics & Expeditions, who run the only air route to Antarctica for people not connected to government or scientific expeditions. These include climbers (often world-class) who spend two to three weeks climbing Mount Vinson, the highest mountain in Antarctica, and skiers who spend 60 to 70 days pulling heavy sledges 700 miles uphill to the South Pole, camping out in extreme conditions. A smaller number of retired clients just fly out to the camp, go on to visit the South Pole, and fly back again. Patriot Hills also provides support, including search & rescue, for film crews, journalists and aviators who are visiting the area. All food and fuel has to be flown in from Chile and all waste is frozen and returned to Chile.

There are no stated minimum fitness requirements for visitors, who make their own decision though with our advice if they ask. The ‘average’ participant is highly experienced – some have climbed Everest – and self reliant, as well as having a ruthless determination to succeed, having spent vast sums of money getting to Antarctica in the first place. Rest is often impossible due to the requirements of survival. The staff looking after clients usually have previous experience through work with the British Antarctic Survey, and are often highly individualistic characters. The aircrews come from northern Canada. It is a multinational, multi-skilled work-force that covers aircraft duties (fuelling, communications, loading, weather), clearing of snow and ice, entertaining the clients by taking them climbing, skiing and so on, as well as medical duties and cooking. Staff have to function normally despite suffering injuries from skiing, kiting (sailing on skis) and seriously fast tobogganing. Wrist tendonitis and elbow epicondylitis are extremely common due to prolonged digging in concrete-like snow, and the multiple heavy manual tasks involved in fuelling aircraft from 200 litre drums. Both visitors and staff have usually taken significantly excessive
doses of non-steroidal anti-inflammatory drugs (NSAIDs) and analgesics before seeking help, though will often deny this as they are concerned that the doctor may then refuse to give them any further treatment at all.

The role of the Base Camp medic includes providing medical care to clients and staff, looking after clients on South Pole flights, and the general camp duties listed above. We have no direct involvement in the scientific work, although we do gather weather data. Problems encountered during the short austral summer season ranged from major (spinal fracture from helicopter crash, acute psychosis), through medium (chest infections, frostbite, dental pain, hand fractures and multiple musculoskeletal complaints), to minor (tinea cruris, pityriasis rosea and ingrowing toe nails).

The nearest hospital is 2000 miles away in Chile, and even if the weather is good, the shortest time for transferring a casualty is 14 hours. No facilities for lab tests or cross-matching are available at the camp, but a good standard of pre-hospital emergency care equipment is available.

My own previous cold climate experience includes working on a bush air ambulance service in Canada for a year, and as medic on expeditions to the Arctic, Himalayas, Alps, Scandinavia and elsewhere. This paper describes ten clinical cases as examples of how valuable acupuncture can be in a polar environment.

**Cases**

A 48 year old male presented with anteromedial knee pain. He had no history of pain before he slipped on ice and felt a crunching feeling. His injury had happened six weeks earlier and his condition was not improving. Examination findings were consistent with sprain of the medial collateral ligament. He was treated with strong periosteal pecking of the painful area, and his pain resolved in two days.

A 34 year old male had suffered shoulder pain since he dislocated it twice three years ago. Examination showed full shoulder movement, with pain around the acromioclavicular joint. He reported significant improvement after periosteal pecking, and requested one further treatment four weeks later.

A 28 year old female (adventure guide) presented with recurrent low back pain associated with intermittent radiation to both anterior thighs and groin area. She had full back movement, with pain at extremes of range only. Trigger points were found near the left 12th costovertebral joint, both lumbar paraspinal areas and the midpoint of both iliac crests. I was able to reproduce her symptoms during acupuncture and she reported that the pain resolved six hours later.

A 32 year old male (extreme climber) indicated pain around his left scapular area and also had reduced neck movement. He had previous blunt trauma to cervical and thoracic spine, but no history of fracture. Trigger points were identified along the medial scapular border and lower left side of the neck. There was good improvement with acupuncture.

A 37 year old female (adventure guide) had a hard fall during kiting, injuring her neck. She had no midline pain, but marked pain and muscle spasm along the left side of her neck. The pain and spasm resolved following treatment with one 40mm needle to the paraspinal muscles adjacent to C6.

A 52 year old male (aircraft mechanic) complained of low thoracic back pain and upper lumbar pain. Palpation revealed trigger points in the upper part of his right quadratus lumborum muscle. His pain was resolved with two treatments. A 47 year old male climber had a long history of low back pain with a compression fracture of L5 eight years before. He had an exacerbation...
of his pain with left foot drop two months before the trip. The pain worsened during activity in Antarctica. There was no evidence of disc prolapse. Multiple trigger points were identified and treated on the left side of the lumbar spine, along the left iliac crest, over the left greater trochanter and down the iliotibial tract. One treatment gave good relief of his back pain, but despite two further treatments, his leg pain did not improve.

A 48 year old female had neck pain radiating to the right shoulder, triggered by sneezing. A trigger point was found and treated at the root of neck with a good result.

A 50 year old female complained of painful feet after skiing 700 miles. There was tenderness over the heads of both first metatarsals. The local points were needled. She flew out shortly after treatment, but has recently reported that she is now running an hour every day, mostly on soft trails. She has less pain in the feet, though still some pain across the top of her instep after running on hard roads.

A 24 year-old male developed acute onset pain in the right side of his neck and in his right shoulder after prolonged heavy digging. Trigger points were found and treated at the root of his neck and along the right para-cervical spine area. Almost immediate resolution was achieved.

Comment
Field acupuncture was found to have advantages over conventional treatments since most musculoskeletal problems were rapidly resolved. Almost all victims gained some relief, and the majority gained great benefit. There was considerable scepticism at first, but this was overcome by gentle persuasion, and towards the end of the season sufferers would request acupuncture, rather than simply ask for ‘any decent anti-inflammatory’. The reduced consumption of non-steroidal anti-inflammatories should reduce the risks of gastrointestinal problems. There were no complications resulting from ‘field’ acupuncture. The disadvantages of polar acupuncture were that it required removal of clothing (which releases the accumulated body odours) and that treatment was carried out in tents which allowed only limited exposure and examination, particularly of back problems. There was a high recurrence rate of symptoms, due to the working conditions and lack of rest, and we were 2000 miles from help in treating serious complications.

Conclusion
I have no doubt that acupuncture is a useful addition to the usual medical treatments for polar base camps. It seems that acupuncture can be helpful on all types of adventure travel, as it can achieve rapid resolution of most musculoskeletal problems safely, and minimise consumption of non-steroidal anti-inflammatory drugs. Obviously, other conditions such as headache and period pain can also be treated. The lack of trained acupuncturists who can function effectively in extreme climates is the main problem in providing this valuable adjunct to medical care for polar adventurers.