Response of carpal tunnel syndrome to hormone replacement therapy

Ronit Confino-Cohen, Michael Lishner, Hillel Savin, Ruth Lang, Mordchai Ravid

Sackler Faculty of Medicine, Tel Aviv University and Department of Medicine, Meir Hospital, Kfar Saba 44281, Israel

Ronit Confino-Cohen, MD, registrar
Michael Lishner, MD, associate head, department of medicine
Hillel Savin, MD, consultant in rheumatology
Ruth Lang, MD, consultant, department of medicine
Mordchai Ravid, MD, associate professor of medicine

Correspondence to: Dr M Lishner, Department of Medicine, Meir Hospital, Kfar Saba 44281, Israel.

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The carpal tunnel syndrome is five times more common in women than in men¹; it is found most often in women aged over 40 and is therefore common postmenopausally. The ultimate form of treatment is surgical relief of nerve entrapment.² There is, however, general agreement that conservative measures should be tried first. These include mainly splinting, injection of steroids into the carpal tunnel, and non-steroidal anti-inflammatory agents.^{2,3} Treatment with vitamin B-6 has also been advocated, but the therapeutic effect was not corroborated by controlled studies.^{3,4}

We describe two women with severe carpal tunnel syndrome unresponsive to medical treatment, whose symptoms resolved unexpectedly soon after starting hormone replacement therapy for their menopausal symptoms.

Case reports

Case 1—A 52 year old healthy woman had a six month history of numbness and pain in both hands. Examination showed paresthesia in the distribution area of the median nerve. Electromyography confirmed the severity of the disease. Non-steroidal anti-inflammatory agents gave no relief, and she was referred for surgical release of the entrapped nerve. While waiting for surgery and independently of the carpal tunnel syndrome, cyclic hormone replacement therapy (conjugated oestrogen 0.625 mg/day for 25 consecutive days and medroxyprogesterone acetate 5 mg/day for the last 13 days) was started for her climacteric symptoms. A gradual alleviation of her carpal tunnel symptoms followed, and the pain and numbness resolved completely about three weeks subsequently. Surgery was withheld; she was subsequently followed up for 20 months and remained asymptomatic. An interruption of oestrogen treatment for three months did not exacerbate her symptoms.

Case 2—A 54 year old healthy housewife was examined because of typical complaints of the carpal tunnel syndrome in both hands. At the age of 47 she

had had a panhysterectomy because of uterine bleeding due to a submucosal myoma. Pain and numbness began in both hands at the age of 48. Electromyography disclosed findings typical of the syndrome, and after failure of conservative measures division of the left transverse carpal ligament was performed. The outcome of surgery was poor, and she did not submit for surgery of the other hand. At the age of 50 substitution hormone therapy was started. The pain in her hands regressed gradually over several weeks subsequently until both hands became free of pain. During the subsequent three years hormone therapy was interrupted on several occasions for three to four months. Consistently, pain and numbness recurred shortly after cessation of the hormone therapy, only to resolve once the treatment was renewed.

Comment

Although a temporal relation between the onset of the menopause and the carpal tunnel syndrome has been reported,¹ the effect of hormone replacement on the syndrome has not been referred to. In these two patients the beneficial effect of combined oestrogen and progesterone therapy on the symptoms of the carpal tunnel syndrome was unequivocal. In the second patient the typical pain and numbness recurred within a fortnight whenever the hormone therapy was interrupted and responded readily, within days, to its reinstitution. The prompt response may indicate the therapeutic role of oestrogen, which was the first hormone to be given, whereas the progesterone followed 12 to 14 days later. Repeat electromyography was not performed; however, since the indication for surgical intervention is clinical, irrespective of the electromyographic pattern,¹ the favourable response to the hormone therapy allowed surgery to be avoided.

Speculation about the mechanism of action of oestrogen is premature. Since the syndrome is common in menopausal women the possible therapeutic effect of hormone replacement therapy should be established by controlled clinical studies.

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Social and functional impact of minor fractures in elderly people

J M Nankhonya, C J Turnbull, J T Newton

An acute illness can suddenly threaten an elderly patient's social and functional independence. Fractures can be particularly disabling because of pain and the use of splints. Studies on hip fractures culminated in recommendations by the Royal College of Physicians.¹ Minor fractures, which we define as fractures not severe enough to merit inpatient treatment, occur more commonly than major ones, but little is known of their effects on the overall wellbeing of patients in the community. We assessed the impact of minor fractures on elderly patients' activities of daily living and the effectiveness of current policies for providing social support.

Patients, methods, and results

We performed a prospective study in the fracture clinic in a district general hospital. Patients aged 70 or over with minor fractures who had not been admitted to hospital but were attending the clinic were interviewed by one of us (JMN). Information on demography, the site of the fracture, functional ability, and social circumstances before and after the fracture was recorded. Patients from nursing and residential homes were excluded. Functional ability was assessed with the modified Barthel activities of daily living index.²

We interviewed 116 patients, of whom 11 were excluded. The mean age of the 105 eligible patients was 77 (range 70-89), and 93 were women. Thirty six lived alone, 53 lived with somebody aged 65 or over, and 11 lived with somebody aged less than 65; five lived in warden controlled accommodation. The table shows the functional scores in relation to the site of fracture.

Eleven patients received statutory home help after a median wait of eight days (range 5-20). Four patients

Department of Geriatric Medicine, Arrowe Park Hospital, Wirral L49 5PE
J M Nankhonya, MRCP, registrar
C J Turnbull, MRCP, consultant

Department of Behavioural Sciences, Salford University, Salford M6 6PU
J T Newton, BA, lecturer in statistics

Correspondence to: Dr J M Nankhonya, 24 Colmore Avenue, Spital, Wirral L63 9NL.

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Site of fracture	No of patients	Mean (SD) functional score	
		Before fracture	After fracture
Arm:			
Hand	8	88.12 (5.30)	71.88 (8.43)
Wrist	37	88.78 (6.60)	63.05 (9.58)
Elbow	4	90.00 (0.00)	67.50 (2.89)
Humerus	30	86.50 (6.97)	58.13 (10.24)
Leg:			
Foot	6	90.00 (0.00)	72.50 (4.18)
Ankle	10	88.50 (4.74)	65.20 (12.58)
Shin bone	5	90.00 (0.00)	55.40 (12.18)
Knee	5	86.86 (3.21)	42.00 (13.04)

Mean functional score before fracture (88.2 (5.87)) v mean functional score after fracture (62.87 (11.61)), $p < 0.001$ (Wilcoxon matched pairs test).

were visited by a district nurse, and three received meals on wheels. Forty four patients required new help from relatives and neighbours, and six of these temporarily left their homes. Nine paid for private cleaners and one employed a cook. Sixty five stated that they required home help especially during the first two to four weeks after sustaining the fracture. Fifteen were severely disabled, and 59 had moderate functional disability on the modified Barthel activities of daily living index.

Comment

The targeted group had been discharged home from an accident and emergency department immediately after sustaining minor fractures. Most of the patients lived alone or with an elderly carer. The contribution of statutory services was disappointing.

Roberts noted that patients with fractures of the arm faced particular difficulties despite being fully mobile.³ Our study does not support this, but patients with fractures of the knee, humerus, or shin bone had significantly lower activities of daily living scores after

fracture (analysis of variance, $F = 6.27$, $p < 0.001$). This is partly because management of these fractures entails near total immobilisation and non-weight bearing of the affected limb, which directly influences the Barthel index. The effects of splinting are amplified in patients with contralateral hemiplegia or severe arthropathy.

This study proves that minor fractures adversely affect the functional independence of elderly people. It also highlights the fact that statutory services fail to meet the minimum requirements of care. Few elderly people welcome a change of residence if they can help it, and we contend that the six patients who temporarily had to abandon their homes experienced a severe and avoidable form of social disruption.

Emergency management of elderly people should include a prompt and comprehensive appraisal of their functional ability and social support. Some guidelines have been given by Rowland *et al.*,⁴ and aftercare officers have been advocated.⁵ There is an urgent need to improve statutory services and develop a more structured and efficient system of communication between accident and emergency staff and community workers.

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Centre de Transfusion Sanguine, Groupe Hospitalier Pitié-Salpêtrière, 75651 Paris CEDEX 13, France
Jérôme Babinet, MD, physician
Dominique Jaulmes, MD, physician
Loan Nguyen, MD, physician

Département de Parasitologie, Médecine Tropicale Santé Publique et Unité INSERM 313, Groupe Hospitalier Pitié-Salpêtrière, 75651 Paris CEDEX 13, France
Frédéric Gay, MD, physician
Dorina Bustos, MD, physician
Marc Gentilini, MD, professor of infectious diseases

Institut National de Transfusion Sanguine, Etablissement Cabanel, 75739 Paris CEDEX 15, France
Michel Dubarry, ING BIOLOGIE, biologist

Correspondence to: Dr Babinet.

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Transmission of *Plasmodium falciparum* by heart transplant

Jérôme Babinet, Frédéric Gay, Dorina Bustos, Michel Dubarry, Dominique Jaulmes, Loan Nguyen, Marc Gentilini

Post-transfusion malaria, a well known iatrogenic infection, is preventable by systematically screening exposed blood donors. Possible organ donors are not, however, routinely screened. We report here the first case of transmission of *Plasmodium falciparum* malaria by a heart transplant.

Case report

A 53 year old Portuguese woman was admitted on 23 April 1990 for heart transplantation for left ventricular insufficiency. Postoperatively her condition was stable until a high grade fever of 40°C appeared on the 12th day after transplantation. *P falciparum* malaria was diagnosed on day 18, when trophozoites were found in a Giemsa stained thin smear taken for a complete blood count (10.3% parasitaemia). Despite treatment with intravenous quinine 20 mg/kg/day she died of complicated malaria on day 22.

As the patient had no history of travel to any malarious area, an investigation was conducted at our blood transfusion centre. Even before the results of serological tests on the blood transfused during and

after the operation were confirmed negative, we suspected the transplanted heart as the source of contamination. We discovered that the heart, procured from another hospital, came from a 51 year old Cameroonian woman. This donor, who suffered an intracerebral haemorrhage, had been in good health since arriving in France 15 months earlier with no history of fever or illness. Therefore malaria testing had not been included in the serological screening, and the African origin of the donor was overlooked. The heart donor's serum indeed proved positive: antibody titres 1/600, one positive arc on counterimmunoelectrophoresis to *P falciparum*, and strongly positive for *P falciparum* antigen on enzyme linked immunosorbent assay (ELISA; sensitivity 94% and specificity 99%).

Both kidneys had also been grafted. The first recipient was a 45 year old man, who died of overwhelming cytomegalovirus infection 45 days after transplantation. Serological tests for malaria antibody were negative on days 0, 30, and 45 but were weakly positive for antigen on day 30. The second recipient was a 4 year old boy, whose condition was stable and remarkably good. Serological tests were still giving negative results 105 days after transplantation.

Comment

To our knowledge there has been only one report of transmission of malaria by an organ transplant (kidneys).¹ In other reports of possible transmission from a transplanted organ recrudescence of malaria in the recipient remained a possibility.^{2,5}