and the needle is withdrawn. The catheter is connected to a 23G butterfly needle and an *x*-ray picture is taken after injecting Hypaque (sodium diatrizoate) 45%. The catheter tip should lie in the termination of the inferior vena cava or low in the right atrium. Since it is simple to withdraw the catheter an adequate length should be inserted in the first instance. The incision is then closed. The catheter is anchored to the skin at its point of entry by spraying with Dow Corning Medical Adhesive B. The butterfly needle and the catheter are then taped securely to the thigh.

Ten catheters were inserted in nine children aged from 2 weeks to 2 years and 3 months. They remained in place for 3-42 days. They were removed either on completion of intravenous feeding or because of septicaemia. The one removed at three days was inadvertently disconnected shortly after insertion and septicaemia resulted. No other catheter was removed in under 14 days. There were no complications related to the insertion or to the position of the catheter. There was no infection at the site of entry of the catheter. Septicaemia occurred in three children and in each case was due to disconnection at the needle-catheter junction. Three children, of whom two were previously septicaemic, died of unrelated causes several weeks after the catheters had been removed. Necropsy showed no evidence of thrombosis in the inferior vena cava.

Comment

This technique may be used when no suitable peripheral veins are available for cannulation.[2] Subclavian vein catheterisation is an accepted alternative but carries its own hazards.[1] There may also be cases when the head and neck veins cannot be used. Nursing care is easy since no splintage is required and the children may be easily changed and dressed. The incidence of septicaemia is disturbing but it seemed to be due solely to needle-catheter disconnection. Methods of safeguarding this junction are being investigated. Lastly, the technique described is simpler than the operative approach to the internal jugular vein and never requires general anaesthesia.

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Microcrystalline calcium hydroxyapatite compound in corticosteroid-treated rheumatoid patients: a controlled study

Osteoporosis is common in rheumatoid arthritis (RA), particularly when treated with corticosteroids. It may lead to fractures, especially in the spine. The management of osteoporosis is unsatisfactory, so methods are sought to prevent its development. In postmenopausal women calcium supplements partly prevent bone loss. Loss of bone mineral, however, is not the same as loss of calcium, since mineralisation also depends on magnesium, phosphate, fluoride, and other substances. We have conducted a controlled trial using a microcrystalline hydroxyapatite compound (MCHC) given as Ossopan. MCHC is prepared from young bovine bones by grinding and sieving after removing the fatty constituents, leaving the minerals in their natural ratios as well as residues of matrix, proteins, and glycosaminoglycans.

Methods and results

Seventy-two corticosteroid-treated patients with rheumatoid arthritis aged 50 years or over with stable disease and without other systemic disease were divided into two groups matched for age, sex, and corticosteroid dosage. In addition one group received MCHC 6 g daily for 12 months. The patients were seen frequently, with detailed assessments initially and at 26 and 52 weeks. Eight withdrew (one for gastrointestinal intolerance, one who disliked the powder, two who failed to attend, and four because of corticosteroid withdrawal) but the groups remained well-matched.

Over the year patients in both groups lost stem height (the crown-seat distance with the patient sitting in a standard chair), but significantly more did so in the control than in the MCHC group (table). Bone density was recorded by photon absorption densitometry at a standard site across the left radius and ulna well away from the wrist and elbow. The radial bone density decreased in both groups but significantly more so in the controls. When recalculated as a percentage of the initial bone density the loss among the controls remained higher, although the difference did not quite reach statistical significance. The ulna bone density decreased in both groups, minimally but not significantly more in the controls. Changes in the spinal radiographs during the year were small and similar in both groups. The patients' spinal symptoms were scored and changed in a similar fashion in both groups, but more controls noted that they worsened. The drug did not affect the activity of the arthritis. No patient developed hypercalcaemia, hypercalciuria, or other toxic effects. About 20% disliked the sweet taste of the powder.

Changes in indices of osteoporosis after one year

	Control group	MCHC-treated group	P value
Mean loss of stem height (cm ± SD)	1·16 ± 0·71	0·87 ± 0·58	0·01 < P < 0·05
Mean loss of radial bone density (BMC/W ± SD)*	0·056 ± 0·033	0·043 ± 0·029	P < 0·05
Mean loss of radial bone density (% of initial density ± SD)	5·29 ± 3·34	4·78 ± 3·55	NS†
Mean loss of ulna bone density (BMC/W ± SD)	0·033 ± 0·031	0·030 ± 0·026	NS
No of new vertebral crush fractures on radiographs	4	3	NS
Back symptoms:			
Better	6	8	
Same	15	20	NS
Worse	11	4	

*BMC/W = Bone mineral content/bone width.
†NS = Not significant.

Comment

MCHC has been reported to improve healing of fractures and to help back pain in postmenopausal osteoporosis.[1] Dent and his colleagues[2 3] gave MCHC in hypophosphataemic osteomalacia and idiopathic juvenile osteoporosis with benefit. Dent (personal communication) regarded MCHC as preferable to other calcium supplements because it seemed better absorbed, since the calcium and phosphate are in optimal proportions and in a suitable microcrystalline form, and because of the other components. There is evidence that calcium is better absorbed from MCHC by mouth than from other calcium preparations[1 4] and that calcium ions are more readily absorbed in the presence of amino-acids.[5] But long-term comparisons of MCHC with, for example, calcium gluconate are required. The results of this trial suggest that MCHC has a significant prophylactic effect in preventing the development of osteoporosis in corticosteroid-treated rheumatoid patients. Perhaps the drug should be started concurrently with the corticosteroids rather than waiting until osteoporosis has developed.

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