THE USE OF KAWAI YAMAMOTO TECHNIQUE FOR THE TREATMENT OF KIENBOCKS DISEASE

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We are reporting the case of a 22 years old woman who had Kienbock disease that was initially managed by ulnar lengthening and then by pronator quadrates pedicle bone graft. Three months post-operatively radiographs show marked resolution of the patient's condition and clinically the pain disappeared.

CASE REPORT

A young woman aged 22 years came to our outpatient in 1993 with pain right wrist of 2 months duration. The pain was aching in character. The pain increased on flexion and extension of the wrist and was severe during the night. No history of trauma or a concomitant illness was elicited.[8,9] On initial examination the range of flexion and extension was complete and so were the pronation and supination. On palpation the wrist was painful over the mid dorsal area. Routine lab. tests haemogram ESR, uric acid were within normal limits and RA factor was negative. On the initial AP and Lateral X-Rays increased density of the lunate[2,6] was evident. A diagnosis of Avascular necrosis of the lunate was made (Lichtman stage II). The ulna was short with an ulna minus variant of 3mm. The patient was treated with different NSAIDs for 2 months. The pain would subside as long as the patient was on NSAIDs but as soon as they were withdrawn, pain would recur. Therefore a below elbow back slab[5] was applied for one month. The symptoms got relieved temporarily but after some time they recurred. She underwent short wave diathermy of the wrist for 02 weeks twice but of no avail. Finally it was decided to operate upon her. Ulnar lengthenings was performed through a straight incision over the distal 1/3 of the ulna, over its subcutaneous border. Subperiosteal osteotomy was performed and a gap of 4mm was created between the bone ends. This position was maintained with a 4 hole DCP. The gap was filled with autogenous bone graft. Six months later the patient presented with the picture shown in Fig. 1. The osteotomy site had gone into non union and the avascular necrosis of the lunate had progressed to stage III (Fig. 2).

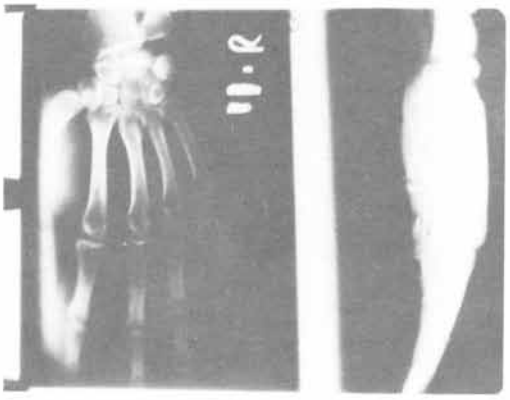

Fig. 1.

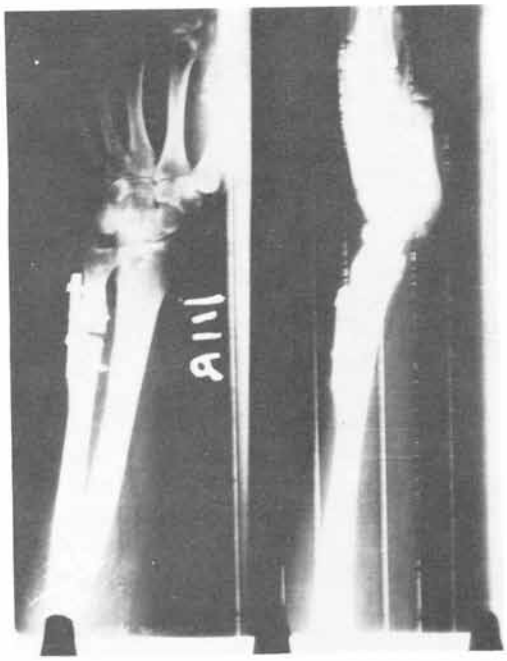

Fig. 2.

Fig. 3.

It was then decided to revascularize the lunate through the pronator quadrates pedicled bone graft. Through an incision shown in Fig. 3 the distal radius, ulna and the carpal row was exposed. The distal 1/4 of the muscle along with its insertion on the radius was lifted as shown in Fig. 4.

A possible alternative of lifting the ulnar insertion was also considered. A trough of the size of the detached insertion of the muscle was made in the lunate which would serve as a receptor site. The graft was then seated into this trough. No fixation was used. The ulnar non union was grafted with cancellous bone taken from the distal radius. The wound was closed in layers. A plaster cast was applied for 01 month. Three months after the operation the patient was pain free, though on extreme flexion and extension she complained of slight pain. She is not using any drugs. Post operative X-Rays show a marked improvement in the vascularity of the lunate[8] (Fig. 5).

DISCUSSION

Kienbock disease is a fairly common affliction. It is painful and at times debilitating. Numerous surgical and nonsurgical methods have been used to treat this disease e.g. lunate implants,[10] resection arthroplasty,[3] intercarpal arthrodesis, ulnar lengthening, radial shortening, wrist arthrodesis, proximal row carpectomy, ligamentotaxis, denervation, silicone rubber implants[7] etc. Revascularization of the lunate through transplantation of blood vessels[4] and pedicled pisiform[11] has also been suggested as a method of treating this disease. The idea of using this particular method came from the use of the

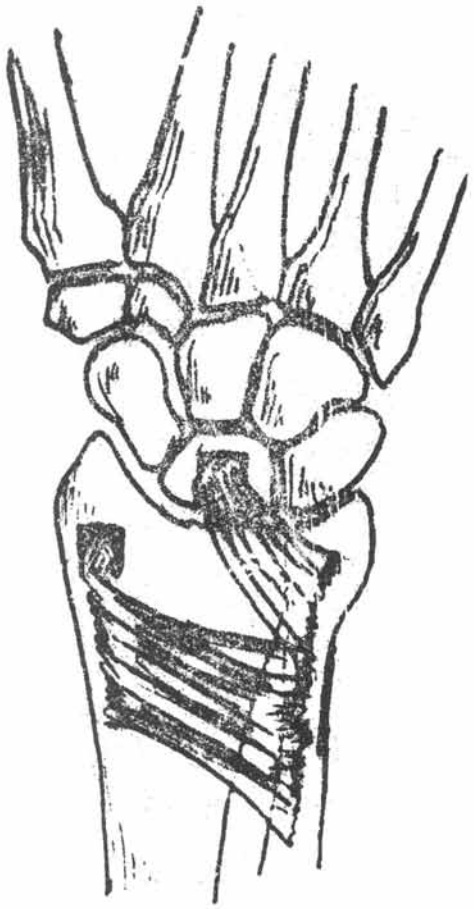

Fig. 4.

pronator quadrates pedicled bone graft in treating scaphoid fractures. The initial procedure of ulnar lengthening was preferred to radial shortening because of the relative simplicity of the procedure. In literature available to us we did not come across any report on the use of this particular technique for the revascularization of the lunate. Although this is a single case but we are encouraged by the result and in future intend treating stage II and III of Kienbocks disease by this method. We feel that this method is simple and easy to accomplish technically.

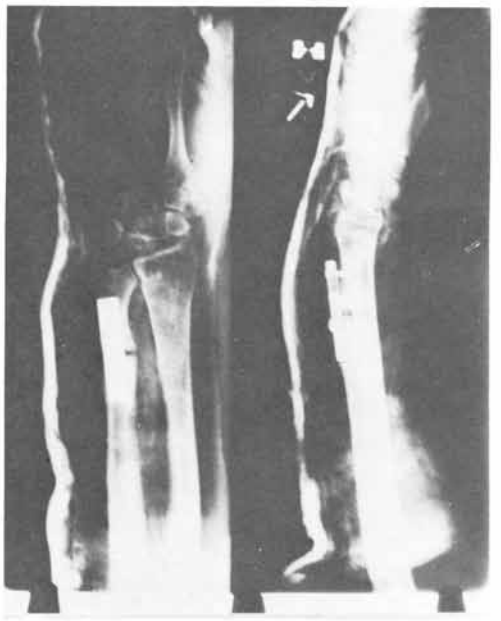

Fig. 5.

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