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## Letters to the Editor

G. E. B. Giddins

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## Letters to the Editor

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Dear Sir,

The article on distraction of the carpus due to external fixation of comminuted fractures of the distal radius (*Journal of Hand Surgery*, 18B: 4: 506-510) was interesting but I believe a few points are contentious and merit clarification.

The author suggests that after external fixation the inability to correct the palmar angle of the distal radius is due to "intact strong volar ligaments". This concept is theoretically appealing. However, in the clinical situation more often than not it is the severe dorsal comminution that prevents restoration of the palmar angle because dorsal cortical length is lost. The comminution may be sufficient to warrant bone-grafting to restore the anatomy.

Arthroscopic studies after distal radial fractures have shown that the radio-scapho-lunate ligament is torn in 90% of cases and there is dorsal capsular disruption in 66%. It is likely that both palmar and dorsal structures are torn more often than was previously thought. If this is the case then over-distraction is likely to encourage lengthening of palmar and dorsal capsular structures with functional compromise.

It has been suggested that tension on soft tissues, as produced by ligamentotaxis, may induce reflex sympathetic dystrophy. Over-distraction is therefore something to be avoided if one wishes to prevent this complication.

In Figure 2a there is a fracture of the ulnar styloid which seems to have failed to unite (Fig 3a). Perhaps the author would like to comment on the relationship between over-distraction and the fate of ulnar styloid fractures, particularly in the presence of negative ulnar variance as was the case.

In considering the above points it is surprising that functional compromise was not shown in Biyani's series. The follow-up varied from 6 to 24 months and it is possible that a longer follow-up may show a different functional outcome. To me, over-distraction does not seem to be entirely innocuous.

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Dear Sir,

The radio-scapho-lunate ligament (RSL) has been shown to have poor mechanical properties and this "ligament" in fact acts as a neurovascular pedicle for the scapho-lunate articulation (Berger et al, 1991). It is easy to understand why there is a high incidence of tears of the RSL in distal radial fractures. Volar ligaments other than the RSL appear to be of more mechanical importance. I clearly stated that the volar ligaments must have been stretched or damaged at the time of injury to allow distraction of more than 3 mm on ligamentotaxis.

Over-distraction of the carpus for 4 to 6 weeks did not seem to compromise function of the wrist. All the patients were immobilized for 2 to 3 weeks after removal of the fixator and this seems to have allowed the ligaments to heal.

I am aware of reports of an increased incidence of reflex sympathetic dystrophy after external fixation but this may be due to the severity of the fracture rather than the mode of treatment. No patient in my small series had this problem.

The natural history of displaced fractures of the ulnar styloid is well-established and there is a high incidence of non-union, with or without over-distraction and with or without iatrogenic negative ulnar variance. It has been my training and practice not to internally fix acute ulnar styloid fractures in patients with associated distal radial fractures but internal fixation of acute displaced basal ulnar styloid fractures is probably appropriate.

I agree that the follow-up is relatively short but I think that late functional impairment is more likely to be due to traumatic arthritis than overstretching ligaments at the time of treatment. I would like to state that I do not recommend prolonged over-distraction as the treatment of choice for comminuted fractures of the distal radius. The message that I was trying to convey is that 4 to 6 weeks of radio-carpal over-distraction without altering the distal radio-ulnar relationship is safer and more acceptable than inadequate reduction. I have no hesitation in supplementing the fixation with K-wires and adding bone grafts if necessary.

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### Reference

BERGER, R. A., KAUER, J. M. G. and LANDSMEER, J. M. F. (1991). Radio-scapho-lunate ligament: A gross anatomic and histologic study of fetal and adult wrists. *Journal of Hand Surgery*, 16A: 2: 350-355.

Dear Sir,

Further to the interesting articles in the April 1993 issue and the correspondence in the December issue, there is other evidence against the association of Dupuytren's disease with alcohol intake and diabetes.

Carson and Clarke (1993) recently reported the incidence of Dupuytren's disease in pensioners of the Royal Hospital, Chelsea. There was no difference in the incidence of Dupuytren's disease in those noted to have a significant alcohol intake (by questionnaire and measurement of blood gamma-glutamyl transferase on admission) and matched controls. Nor was there any significant difference in the frequency of diabetes.

Plainly some of the previously-held views about Dupuytren's disease are open to question.

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#### Reference

CARSON, J. and CLARKE, C. (1993). Dupuytren's contracture in pensioners at the Royal Hospital, Chelsea. *Journal of the Royal College of Physicians of London*, 27: 1: 25-27.

Dear Sir,

In their report of two cases of accidental injection of white spirit into the hand of golfers, Rimmer, King and Franklin (*Journal of Hand Surgery*, 18B: 5: 654-655) mention the use of a pulse oximeter as part of their post-operative management. I presume this was used to monitor the circulation in the digit.

It should be pointed out that pulse oximetry is not a suitable "early warning system" for peripheral vascular problems. It measures oxygen saturation and is a measure of pulmonary function rather than blood flow. It has been shown to give normal readings in the presence of significant vascular impairment (Clay and Dent, 1991). The belief that this device is an adequate substitute for clinical observation is a widely held belief among nursing and junior medical staff that should be discouraged.

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#### Reference

CLAY, N. R. and DENT, C. M. (1991). Limitations of pulse oximetry to assess limb vascularity. *Journal of Bone and Joint Surgery*, 73B: 344.

Dear Sir,

I read the paper by Al-Qattan and Stranc describing a safer method of removing the nail after a nail gun injury to the fingers (*Journal of Hand Surgery*, 18B: 5: 652-653). I disagree that removal by an antegrade method after cutting off the head of the nail is safer than open exploration of the nail track.

The authors point out that the barbs are attached to the nails by an adhesive resin. They overlook the possibility that the resin may become detached from the nail and left within the wound. This risk has been pointed out previously (Barber, 1989; Kenny et al, 1992). The authors also fail to acknowledge that neural injury may be clinically undetectable in a digit which is acutely injured and that the likelihood of such an injury is high, particularly in the case illustrated in their paper.

I disagree that removal of the nail by the method described is safe. Removal of the nail without formal exploration of the track should be discouraged.

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#### References

BARBER, F. A. (1989). Penetrating knee injuries: The nail gun. *Arthroscopy*, 5: 3: 172-175.  
KENNY, N. W., KAY, P. R. and HAINES, J. F. (1992). Nail gun injuries to the hand. *Journal of Hand Surgery*, 17B: 5: 577-578.

Dear Sir,

We did not say that removal of the nail by the antegrade method was safer than open exploration of the nail track. What we said was that removal of the nail by the antegrade method was safer than the traditional retrograde method (without open exploration).

After nail gun injuries to the hand open exploration of the track is indicated if there is clinical evidence of neurovascular injury, a fracture seen on X-ray or if the distal end of the nail is not visible. When these indications are not present, as in our case, and the surgeon decides to remove the nail without open exploration, the nail should be removed in an antegrade fashion. Removal of the nail in the same direction as its introduction prevents entrapment of soft tissue by the hooked barbs and hence the risk of detachment of the barbs or neurovascular injury by the barbs during removal of the nail is minimized.

M. M. Al-Qattan  
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Dear Sir,

I read with great interest the paper by Miura et al about a case of Proteus syndrome (*Journal of Hand Surgery* 18B: 3: 308-309).

As differential diagnoses the authors suggest von Recklinghausen's disease, Klippel-Trenaunay-Weber syndrome, Ollier's disease and Bannayan syndrome. Perhaps one should add the Rubinstein-Taybi syndrome, a well-known complex of congenital malformations consisting of peculiar facies, broad thumbs, big toes and variable mental retardation.

Nader Chahidi, MD  
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Dear Sir,

Proteus syndrome is associated with macrodactyly, whereas the broad thumb in Rubinstein-Taybi syndrome is reported as being a short thumb with a particularly short distal phalanx.