MEDICAL REPORT

On

Mr K

Mr Lindsay Muir M.B., M.Ch.Orth., F.R.C.S. Orth (Glasg)
Consultant hand surgeon

Salford Royal Hospital,
Stott Lane,
Salford,
M6 8HD.

Patient:	Mr K
Address:	
Date of birth:	
Occupation:	
Report requested by:	
Solicitor's reference:	
My reference:	
Date of Zoom teleconsultation:	
Date of clinical examination:	
Place of examination:	Sutton House Consulting Rooms 27 Wilson Patten Street Warrington WA1 1PG
Date of completion of report:	

1. INTRODUCTION

1.1. This report has been prepared at the request of Messrs. In their letter of instruction they note the history of an accident on.

1.2. In preparing this report I understand my duty is to the Court and I have done my best to discharge this duty conscientiously.

1.3. The contents of the history section of the report are based on the information conveyed to me by Mr K in the course of our Zoom teleconsultation this afternoon. Mr K speaks very little English but I had the benefit of translation services of his friend, Shirley (unfortunately the planned interpreter was unable to make the call). I have checked carefully with Mr K.

1.4. The room in which he was standing seemed a little busy but the people in it were asked to leave and he explained that he felt that he was happy with the level of privacy afforded and that he was happy with the use of Shirley, his friend, as translator and that he was overall happy to proceed with the consultation.

1.5. This consultation was supplemented by a face to face clinical examination on, followed by completion of the report.

2. DOCUMENTS EXAMINED

2.1. Letter of instruction

2.1.1. The letter of instruction simply outlines the circumstances of the accident.

2.2. Hospital records

2.2.1. NHS Trust, case sheet number .

2.3. Radiographs

2.4. GP records

2.4.1. Health Centre

3. HISTORY OF ACCIDENT

3.1. The accident to which this report pertains occurred on. Mr K was making mince. He caught his fingers of the right hand in the machine. The machine was pulling his hand in. His hand was trapped for three hours. He was trying to undo it with his left hand. His employer tied a tourniquet around his upper arm. He also could not release the hand. The police and fire brigade and ambulance were called. The fire brigade could not release the hand. He was put in the ambulance with the machine still attached and taken to the Royal London Hospital.

3.2. Mr K was admitted to hospital and indeed would be kept in for ten days. His hand was released. He had fractures of all metacarpals "in four places". He underwent surgery. He was allowed home to be followed up in the physiotherapy and the outpatients.

3.3. Mr K then underwent a second operation to amputate the tip of the middle finger. He has now been discharged from both physio and outpatients. He describes that the worst of the pain lasted for six or seven months.

3.4. The present position is that Mr K is still uncomfortable. This seems to be his primary problem and the problem is that his fingers are stiff in extension and he can never make them into a fist. He is always trying to close them. He has tenderness but yet loss of sensibility in the palm. He has no sensibility in his thumb. He has pain on bumping the index and middle fingers. He has no pain in the little finger. His pain is worse in the

cold. He has no pain at rest. He describes that originally his hand was taken into the mincer up until the wrist crease.

3.5. In activities of daily living Mr K is able to wash, dress and do up zips and buttons with difficulty only. He requires help in tying his shoe laces. He is unable to cut up food and this has to be done for him. He is unable to cook or clean. He is unable to make his bed. He carries shopping in the left hand. He is unable to do the ironing. He is unable to drive. He has not looked into driving adaptations. He is unable to write and has not tried writing left handed. He is unable to type. He is unable even to type one handed on the right because it hurts to press keys with his fingers.

3.6. Mr K has kindly completed a DASH (disabilities of the arm, shoulder and hand) score. This is a standardised questionnaire returning a score ranging between 0 (minimal) and 100 (maximal) disability.

3.7. The calculated scores are as follows:

general module	88
work module	Not scored
sports/performing arts module	Not scored

3.8. Psychological aspects

3.9. Mr K describes that his "nerves are very bad". His friend, Shirley, explained that he tries to hide his hand. He feels very restricted and limited. He is uncomfortable when people look at his hand. He had one session of psychological treatment only but he states that he became frustrated and that the therapist would not listen to him and he has not had any further treatment. In any case this was delivered over the phone which he found unsatisfactory. I did ask if he had not had some follow up arranged as an inpatient or through the clinic but he tells me that he did not. He has difficult in sleeping because of psychological problems.

4. OTHER INJURIES

4.1. Nil.

5. GENERAL HEALTH

5.1. Fit and well.

6. PAST HISTORY

6.1. Nil.

7. DRUG HISTORY

7.1. Analgesics.

7.2. Mr K smokes 7 – 8 cigarettes a day.

8. EMPLOYMENT

8.1. At the time of the accident Mr K had worked for Messrs for four weeks. He worked 8 am till 8 or 9 pm six days a week. He has not been back to work since. He has no ideas what he might do. He has no other skills. He has never done any other job.

9. DOMESTIC CIRCUMSTANCES

9.1. Mr K lived alone for a short while. He rented a room in a shared house and helped out with the cleaning by arranging a cleaner as required. Family and friends came to assist. He now lives with his girlfriend.

9.2. When he was living alone Mr K ate a lot of takeaways so he does not have to cook. His family and friends helped him on occasion.. Mr K sent his laundry to be cleaned professionally.

9.3. Mr K now lives with his girlfriend and she now cooks and cleans for him and generally assists him.

9.4. <u>Hobbies</u>

9.5. Mr K used to enjoy swimming, socialising and going to the pub and cinema. He no longer does this. He feels that the attention is always all on him and his hand.

9.6. Care and assistance

9.7. Mr K's mother came from for approximately three months to help look after him. She then had to return to as his stepfather had cancer.

9.8. Mr K had assistance from other friends.

9.9. Mr K now lives with his girlfriend who now assists him as required.

10. CLINICAL EXAMINATION

10.1. Mr K attended with his partner.

10.2. He is 169 cm tall and weighs 65 kilos.

10.3. Neck

10.4. He has full extension/flexion.

10.5. Shoulders

10.6. He has full pain free elevation.

10.7. Elbows

10.8. He has a 5 degree flexion contracture on the right elbow but has full flexion. On the left elbow he has full extension/flexion.

10.9. Wrists

10.10. Ranges of movement are as noted below:-

	Right	Left
Pronation	70	70
Supination	80	80
Extension	55	60
Flexion	95	90
Ulnar deviation	30	50
Radial deviation	30	10

10.11. The pseudostability test is positive on the right but it is positive on the left side also. None of the intercarpal shear tests, in particular the scapholunate shear tests and Kirk-Watson tests, are positive.

10.12. Hands

10.13. The left hand is normal with full extension and full wind up in all fingers and a Kapandji score of 10.

10.14. The right hand is mutilated. The thumb is essentially normal. The index finger has been amputated at the level of the proximal phalanx, the middle finger at the level of the middle phalanx, the ring and little fingers are still present but are dysfunctioned.

10.15. Ranges of movement in the thumbs are as noted in the table below:-

	Right	Left
MCP	35	60
IP	10	30

10.16. Ranges of movement in the fingers of the right hand (approximately) are as noted in the table below:-

	Middle	Ring	Little
MCP	0-30	0-20 (passive 25)	0-0 (30)
PIP	0-20	0-30 (40)	0-0 (40)
DIP			0-0 (20)

10.17. In other words, his fingers in the right hand are stiff in extension. He has a little bit more flexion passively, particularly in the little finger, but he is not able to mount this degree of flexion under his own steam.

10.18. He has extensive scarring with a large scar across the dorsum of effectively the metacarpal heads and a scar running across the palm from the base of the ulnar border of the little finger MCP joint transversely across the palm. This scar is quite tight.

10.19. He has a syndactyly between the ring and little fingers.

10.20. He has a nail spicule on the radial border of the middle finger.

10.21. He has scars on the dorsum of the thumb.

10.22. He has a further volar scar running at the base of the thenar eminence and down towards the carpal tunnel.

10.23. He has no skin creases in the IP joints.

10.24. <u>Neurology</u>

10.25. Fine touch sensibility, where 10/10 is normal, is 6/10 in the thumb, 0/10 in the middle and ring fingers and 4/10 in the little finger.

10.26. Grip strength is only 2 kilos on the right (I have taken only one measurement), 34 on the left.

10.27. The circumference of the forearms as measured 10 cm distal to the lateral epicondyle with the elbow flexed to 90 degrees and the forearm in mid prono supination is right: 25 cm and left 26 cm.

11. RADIOLOGICAL EXAMINATION

11.1. I shall return to the question of radiology in the opinion and prognosis section.

12. REVIEW OF HOSPITAL RECORDS

12.1. NHS Trust.

26.10.2019 There is a note:

HEMS trauma call. Usually fit and well. Was grinding meat in industrial unit. Got right hand trapped in meat grinder. Unable to extricate hand. Hand up to wrist inside unit. Given sedation prior to HEMS arrivals. Tourniquet never applied. HEMS RSI for humanitarian reasons once grinder removed by London Fire Brigade. (Hand still in situ; entire unit and patient attached removed. Given co-amoxiclav by HEMS.)

On examination: hand trapped in mechanism.

Reviewed by trauma surgical consultant. Decision to try and use pliers to grip and turn mechanism in opposite direction and gentle traction to remove hand. Hand easily and gently removed. Significant crush and destruction of structures. Good radial pulse throughout. Referred to the plastic surgical team.

27.10.2019 Tertiary survey showed that there was no further injury. It was noted that Mr K was a heavy smoker however.

27.10.2019 Admission by Mr C, plastic CT3.

Plan: straight to theatre.

There are photographs noting significant crush injuries of the index

and middle finger. On the flexor surface there is a laceration across the palm of the hand running transversely roughly at the level of the distal and then running into the proximal palmar crease together with lacerations over the flexor surfaces of all four fingers. It is not clear whether there is a thumb injury also.

27.10.2019 Operation note.

Mr P.

Findings: right thumb, index, middle and ring fingers cold.

Right little finger warm. Laceration over right wrist. Median nerve and deep branch ulnar intact. EDC and EPL intact.

Right thumb zone 1 FPL not repaired. 100% division ulnar and radial digital nerves not repaired. 100% division of ulnar and radial digital arteries repaired with 9/0 sutures and patent. Comminuted fracture of proximal phalanx with central bone loss treated by crossed 1mm k-wires. Thumb warm post op.

Index finger. Finger attached by 5 mm dorsal skin bridge with fracture of mid proximal phalanx. Soft tissue mangled and unsalvageable. Terminalised at MCP joint. Second metacarpal neck fracture treated with retrograde 1.1 mm crossed k-wires.

Right middle finger. Fracture proximal phalanx treated with two 1 mm k-wires. Fracture head of third metacarpal. Treated with retrograde crossed k-wires. Circumferential laceration base of proximal phalanx. First common digital artery to radial digital

artery sutured 8/0 and sutures at the level of the distal palm. Second anastomosis radial digital artery at the level of the proximal phalanx. 100% division of radial digital nerve not repaired. Second common digital nerve to ulnar digital nerve repaired with 8/0 and sutures. 100% division of FDS and FDP in zones 1 and 2 not repaired. Finger cool post op and of dubious viability.

Right ring finger. Open dislocation MCP joint reduced with 1 x 1.1 mm k-wire. Second common digital artery repaired 8/0 and sutures. Third common digital artery to ulnar digital artery repaired. Third common digital nerve to ulnar digital nerve repaired. 100% division of FDS and FDP in zone 2 not repaired. 100% division of radial digital nerve not repaired. Finger warm post op.

Little finger. Ulnar digital nerve and ulnar digital artery intact. Radial digital nerve and artery 100% division, not repaired. FDS and FDP 100% divided, not repaired.

The wounds were all washed out. The lacerations on the dorsum did not have any EDC or EPL injuries and these were closed with Vicryl sutures. The plan was for a re-look in 48 hours.

28.10.2019 Seen on ward round.

Middle, ring and little fingers seem likely to survive. Still complains of pain.

28.10.2019 Complains of severe pain.

28.10.2019 Seen for patient controlled analgesia.

28.10.2019 Has been off the ward and smoking. Fingers pink and well perfused.

29.10.2019 Difficult pain assessment. Patient speaks little English. Nerve catheter procedure abandoned yesterday as patient became agitated. Patient reports severe pain today.

29.10.2019 Mobilising around the ward. PCA helpful.

30.10.2019 Seen by pain team.

Patient's behaviour has been challenging and disruptive on the ward. Shouting, crying, speaking very loudly on his telephone. Asking for PCA but declined because he keeps leaving the ward and the hospital.

30.10.2019 Seen on ward round.

Consultant ward round.

"Pain remains an issue. Patient aggressive towards staff. Discussed with pain team who are not happy to see patient unaccompanied. They do not suggest restarting PCA due to

patient taking down previously and cannot think of any new alterations to optimise pain medication. Situation further exacerbated by patient refusing to take ibuprofen and paracetamol. I discussed with his nurse in the afternoon who states that the patient is now saying he drinks significant amounts of alcohol daily upwards of 10 cans of beer plus spirit. Referred for assessment."

31.10.2019 Seen on the ward round.

Fingers viable. Continues to complain of pain right hand. Reports drinking two normal strength lagers most days. Smokes one to two joints two to three times a week. Snorts £10 – £20 worth of cocaine every three or four months. Declined referral to community services.

01.11.2019 Seen by mental health liaison service.

02.11.2019 Ward round.

Patient is not at bedside. This is a recurrent issue.

03.11.2019 Ward round.

Feels well apart from some phantom pain from missing fingers. Seen mobilising to go downstairs and smoke. Reinforced please try not to do this for the sake of his hand.

04.11.2019 Will need finger shortening of middle finger. Allow demarcation first.

04.11.2019 Discharged.

26.11.2019 Seen by Mr R., Consultant

"He is in a plaster. Ask therapist to convert him to a thermoplastic splint. When he is improved we will consider second stage surgery."

07.12.2019 Wound dressings. All k-wires removed except for the buried k-wire. Terminalisation of middle finger at middle phalanx level. FDS insertion intact.

30.12.2019 Did not attend hand therapy therefore discharged.

03.03.2020 Seen by Mr E, clinical fellow.

Referred for hand therapy.

Ring finger noted to be very sensitive especially in the digital radial nerve distribution all the way up to the carpal tunnel and had very stiff fingers.

13. REVIEW OF RADIOGRAPHS

26.10.2019 X-ray right hand.

The carpus seems affectively normal. Working from proximal to distally the wrist and the carpus appear normal. The abnormalities are as follows:

Thumb. Comminuted fracture proximal phalanx.

Index. Fracture neck of metacarpal and comminuted fracture of proximal phalanx.

Middle. Fracture neck of metacarpal. Fracture junction of middle and distal thirds proximal phalanx.

Ring. Dislocation MCP joint but no fractures that I can see.

Little. No fractures that I can see.

01.11.2019 CT scan. I am not quite clear why a CT scan was done. It has also been done in the plaster cast which reduces the resolution somewhat. I do not think that it is particularly helpful save to show that insofar as it possible to tell the scapholunate joint is perhaps a little bit wide but the rest of the carpus seems normal with no obvious fractures beyond a fracture of the base of the ulnar border of the little finger metacarpal. There is some dorsiflexion of the lunate but the whole hand is in some dorsiflexion and it is not therefore possible to tell whether this reflects a DISI deformity or not. The scaphoid does not appear abnormally flexed and I think that this probably therefore simply

reflects dorsiflexion of the wrist.

There are a number of follow up x-rays. I propose simply to go straight to the last x-rays of 3 March 2020.

03.03.2020 The abnormalities here as follows:

Thumb. The proximal phalangeal fracture is ununited.

Index. The index has been amputated. The fracture of the metacarpal remains ununited.

Middle. The fracture of the metacarpal has united. The fracture of the proximal phalanx has probably not united and has a k-wire across it. The tip has been amputated.

Ring. The MCP dislocation has been reduced.

Little. On this oblique film now it appears that there was an old fracture of the little finger metacarpal. I believe that this is probably an old fracture, in other words a fracture that pre-dated this particular injury because of the fact that the metacarpal was slightly thickened on the original film but without an oblique or lateral I was unable to make any more confident comment.

14. REVIEW OF GP RECORDS

14.1. Handwritten notes

14.1.1. There are on handwritten notes.

14.2. Computerised records

14.2.1. These extend from 23 January 2020 to 2 March 2020.

23.01.2020 Things much better. Pain mainly in cold water. Happy with plan to reduce MST from 10 to 5 mg. See in one month.

20.02.2020 MST just about controlling pain. Friend going to help enrol him in English lessons.

14.3. Correspondence and reports

14.3.1. There are copies of the letters from the hospital.

14.3.2. There are no further relevant entries.

15. OPINION AND PROGNOSIS

15.1. Accident

15.1.1. On 26 October 2019 Mr K, a 32 year old man, suffered a very serious injury of his right dominant hand in the circumstances described above.

15.1.2. He has been treated at the Hospital.

15.1.3. This report has been prepared 18 months from the date of the injury.

15.2. Right hand

15.2.1. This was an isolated injury.

15.2.2. Mr K has sustained injuries as described above.

15.2.3. In brief, these are:

15.2.4. Wrist

15.2.5. There is a possible mild scapholunate diastasis. On the balance of probabilities in fact this is normal and even if it is not I do not think that this is an injury that is likely to have caused such a diastasis. On this basis therefore I do not think that this injury should be attributed to the accident. In any event, this is of no functional consequence.

15.2.6. Thumb

15.2.7. He has multilevel injury. He has injuries to the arteries and the nerves. He has a fracture of the proximal phalanx which, by the time of the latest available films of 3 March 2020, had still not united.

15.2.8. Index finger

15.2.9. He has lost most of the index. He has a fracture of the neck of the metacarpal which, by the time of the latest available films of 3 March 2020, had still not united.

15.2.10. Middle finger

15.2.11. He has lost the tip. He has a fracture of the proximal phalanx which again had not reunited on the latest radiographs.

15.2.12. Ring finger

15.2.13. He has suffered a dislocation and nerve injuries and arterial injuries as described in the operation note.

15.2.14. Little finger

15.2.15. He has suffered nerve and tendon and artery injuries as below. There is a small avulsion fracture at the base of the fifth metacarpal.

15.2.16. Clinical examination reveals a mutilated and largely dysfunctional hand.

15.2.17. Mr K is able to pinch with adduction pinch between the thumb and the remainder of the hand.

15.2.18. There are a number of problems with further progress for Mr K.

15.2.19. Significantly he states that his fingers are insensate.

15.2.20. He also smokes cigarettes.

15.2.21. He had difficulty in complying with physiotherapy during his last treatment.

15.2.22. In order to make his fingers work again:

15.2.23. (1) they would have to be made more supple,

15.2.24. (2) his bones would all have to have united,

15.2.25. (3) he would then require further surgery,

15.2.26. (4) he would have to be able to co-operate with rehabilitation which may be difficult given his past experiences.

15.2.27. In the first instance it is important to obtain some up to date radiology and he then needs to consider whether he wishes to undergo the arduous and lengthy surgery that would be necessary.

15.2.28. It should be stated that there is no guarantee that this will help because he will have so much scarring that it is likely to be very

difficult to reconstruct his hand. Equally, even some modest amount of flexion would probably make quite a difference to his hand function even if it only just gave him some form of crude pincer grip.

15.2.29. My suggested treatment plan would then be as follows:-

15.2.30. (1) Arrange up to date x-rays.

15.2.31. (2) Assuming that the fractures are united and the joints still in good condition I think that it is worth considering trying to mobilise the ring and little fingers with a course of physiotherapy.

15.2.32. Unfortunately, his fingers are described as insensate (although there are no trophic lesions).

15.2.33. One might however consider transferring his middle finger stump onto his index finger stump such that he has rather better pinch. One might have considered an index ray amputation but I think that his thumb is probably not quite supple enough to reach round onto his middle and ring as they are at present. The transferred stump would therefore simply be to give him a post to pinch against. The disadvantage to this is the fact that it is insensate and there would be a real risk of loss of the finger because of the scarring around the blood vessels.

15.2.34. One might also consider a transfer of a second toe to the index finger stump. Again, this would simply be to give some sort of pinch. However, once again this surgery would be technically difficult with the extensive previous exploration of the neurovascular bundles and the extensive scarring in the palm.

15.2.35. I set out all of the above for the Court for the sake of completeness.

15.2.36. On the very best of circumstances and on the very best of conditions, the surgery is not going to give a good hand.

15.2.37. I believe that a reasonable body of hand surgeons would advise against surgery in this circumstance.

15.2.38. Even if one were to proceed to surgery, the treating surgeon would be wise to warn Mr K about the risks and potential pitfalls of this surgery and furthermore to ensure that his expectations were realistic.

15.2.39. Overall, I consider that at best even successful surgery would result in a modest improvement and there would be some significant chance of failure.

15.2.40. The alternatives therefore are some form of "local" prosthesis. One could also consider a hand amputation and a myoelectric prosthesis.

15.2.41. I would recommend in the first instance a consultation and a report from an expert in prosthetics as to what might be feasible in Mr K's case. If nothing else, this would give him the opportunity to consider the potential options.

15.2.42. I am often rather sceptical of prosthetic reports, particularly when they are for a single lost finger, but in this instance I do believe that there would be significant value in an assessment and a report from a prosthetist.

15.2.43. I shall be happy to comment thereafter.

15.3. Employment

15.3.1. Mr K has not worked since the accident. He will never return to work as a butcher.

15.3.2. He will not be fit, even with the best possible outcome from surgery, to return to fine bimanual work although he might manage some degree of perhaps light stores work.

15.3.3. Unfortunately he does not speak English and he has no IT skills and his position in the open labour market is therefore extremely precarious.

15.4. Equality Act 2010

15.4.1. Whilst recognising that it is a matter for the Court to make this determination I believe that Mr K would appear to satisfy the requirements of the Act.

15.4.2. Alternatively as judged by the Ogden Table Guidelines:

15.4.3. (1) Mr K has a disability which is physical and is expected to last over a year.

15.4.4. (2) The DDA 1995 definition is satisfied in that the impact of the disability has a substantial adverse effect on his ability to carry out normal day to day activities.

15.4.5. (3) The effects of the impairment limit the kind of paid work he can do.

15.5. Domestic circumstances

15.5.1. I accept that Mr K will require some degree of assistance in his day to day life.

15.5.2. I would defer to the opinion of an expert in care and occupational therapy.

15.6. Further comments

15.6.1. I understand my duty is to outline for the Court any potential variation in medical opinion.

15.6.2. I hope that there would not be any significant controversy over the above.

I understand my duty is to the Court and have complied and will continue to comply with that duty. I am aware of the requirements of Part 35, this practice direction and the Protocol for the Instruction of Experts to give Evidence in Civil Claims.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Mr Lindsay Muir,
Consultant hand surgeon,
Honorary senior lecturer in orthopaedic surgery at the University of Manchester

Appendix 1: photographs of right hand on 30

[Photos deleted from this anonymised report for confidentiality reasons]