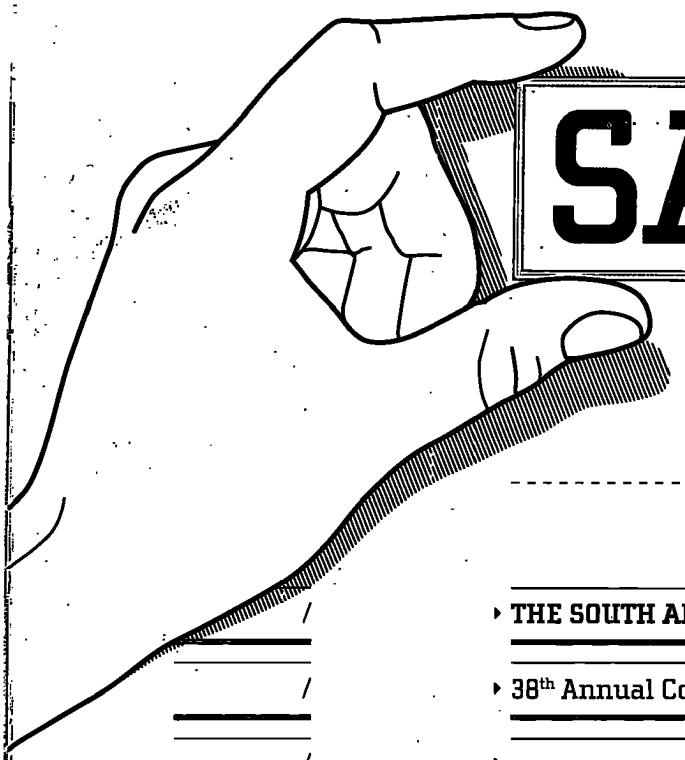
SASSH



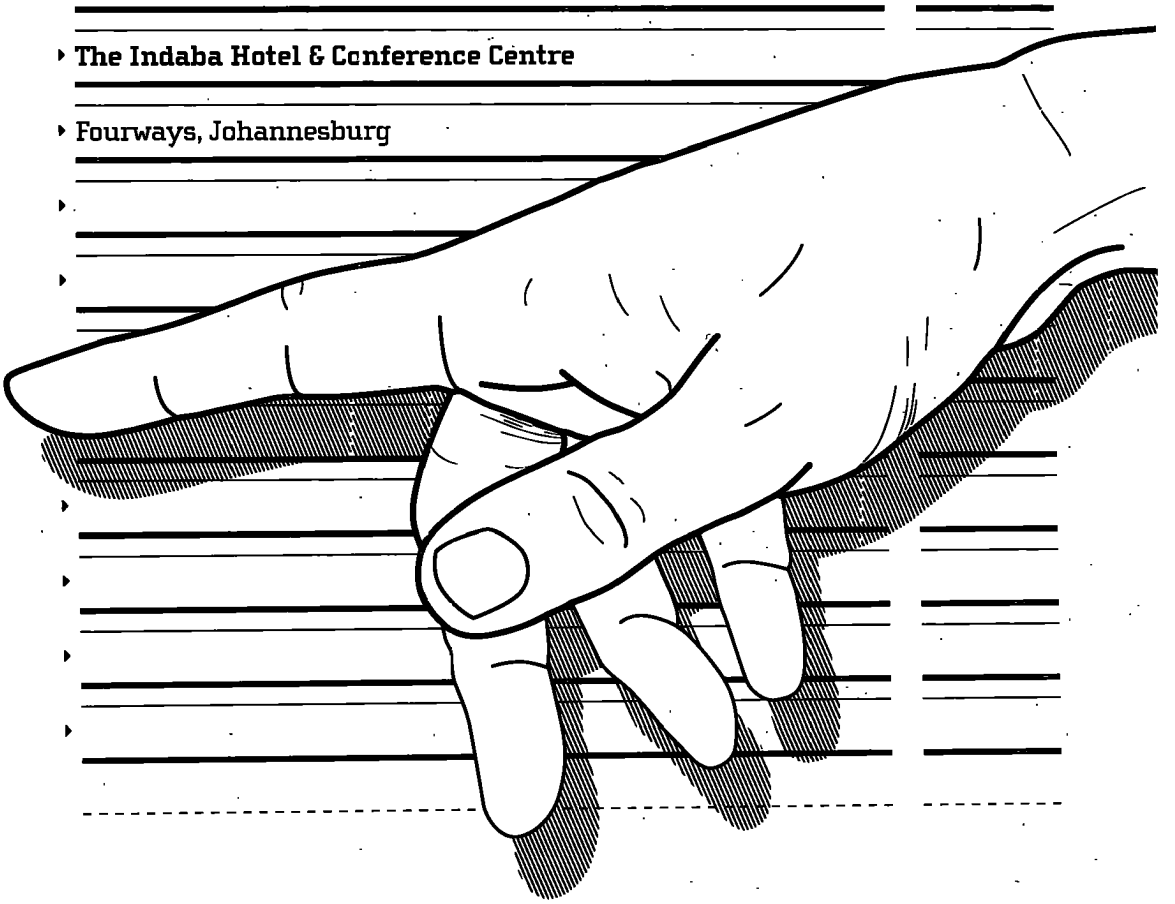
THE SOUTH AFRICAN SOCIETY FOR SURGERY OF THE HAND

38th Annual Congress & Instructional Course

31 August – 02 September

The Indaba Hotel & Conference Centre

Fourways, Johannesburg



2007

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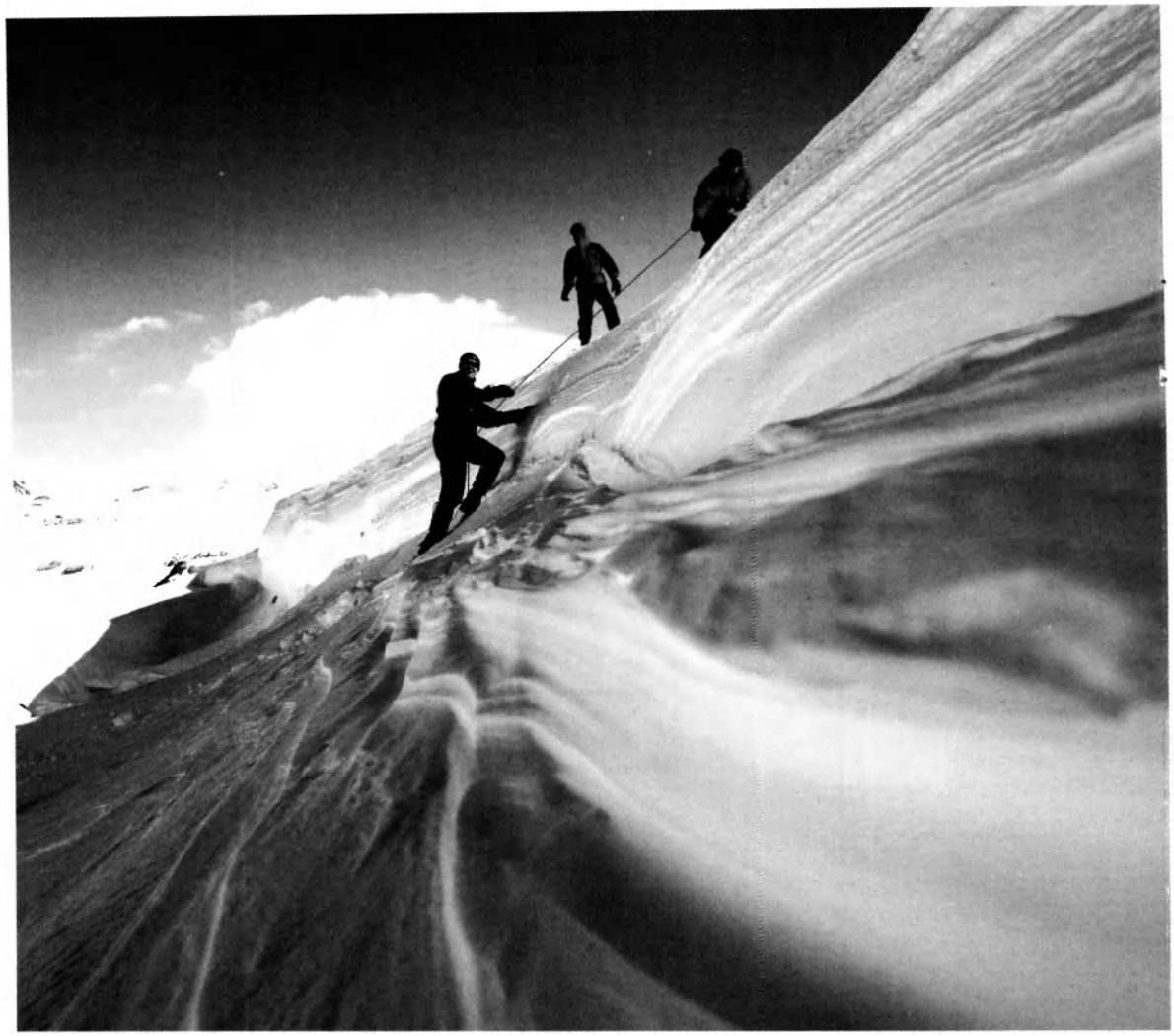

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01 / Congress Program

02 / Messages of Welcome

/ THEO LE ROUX

/ President

▸ Dear Members, Participants, Colleagues

Welcome to Johannesburg for our 38th Annual Congress. The Indaba Hotel will play host to our event and we can rely on good service. Dr Michael Carides has organized a stimulating academic program and we are looking forward to our two overseas guests' input, viz Dr Amit Gupta from Louisville, Kentucky and Dr Mark Ross from Brisbane, Australia.

Everybody is looking forward to a few days of academic interchange and socializing. Once again thanks to Hendrika for her tireless input! ❑

02 /

/ MICHAEL CARIDES

/ *Congress Chairman*

‣ Dear Colleagues

It gives me great pleasure to welcome you all once again to Johannesburg and the Indaba Hotel and Conference Centre for this, the 38th Annual Congress and Instructional Course of The South African Society for Surgery of the Hand.

I am grateful to all those who have contributed to what promises to be an exciting meeting with a varied and interesting scientific program. We are privileged this year to have Amit Gupta (USA) and Mark Ross (Australia) as invited guest speakers. We look forward to sharing their experience and hope their visit will be a memorable one.

As in the past, the trade has played an important role in attending our congresses and this year has been no exception. Once again thank you for your participation and sponsoring our congress.

I wish you all an enjoyable congress and a pleasant stay in Johannesburg. □

03 / International Visitors

/ AMIT GUPTA

- Amit Gupta completed his Residency at The Robert Jones & Agnes Hunt Orthopaedic Hospital in Oswestry, UK and successfully completed his FRCS at the Royal College of Surgeons in Glasgow.

- **He held Fellowships at:**
  -> Pulvertaft Hand Center, Derby, UK (Prof. Frank Burke)
  -> Inselspital, University of Berne, Switzerland (Prof. Ueli Buchler)
  -> Kleinert Institute, University of Louisville USA (Prof. Harold Kleinert)

Amit is a member of the American Society for Surgery of the Hand, American Association for Hand Surgery, Indian Society for Surgery of the Hand and the British Society for Surgery of the Hand.

He is author / co-author of 48 publications and Editor of "The Growing Hand" (Best Medical Text 2000 Royal Society of Medicine, London, UK and the British Medical Association, London, UK).

He has traveled extensively as international Invited Lecturer and Visiting Professor. ❑

03 /

/ MARK ROSS

- Following the successful completion of Mark's FRACS exams in 1996, he was Fellow in Hand & Upper Limb Surgery at Princess Alexandra Hospital. He was a Fellow in Hand and Microsurgery at the Kleinert Institute for Hand and Microsurgery in Louisville, Kentucky, USA during 1997-8.

Mark currently works in private practice in Brisbane, is the clinical Supervisor of the Upper Limb Fellowship program at Princess Alexandra Hospital and his other appointments include:

- **Senior Visiting Orthopaedic Surgeon:** Princess Alexandra Hospital, Woolloongabba, Brisbane, Queensland
- **Visiting Orthopaedic Surgeon:**
  -> Mater Private Hospital, South Brisbane, Brisbane, Queensland
  -> Brisbane Private Hospital, Spring Hill, Brisbane, Queensland
  -> St Andrews War Memorial Hospital, Spring Hill, Brisbane, Queensland
- **Australian Orthopaedic Association Queensland State Committee Member**
- **Queensland Hand Surgery Society Secretary/Treasurer**
- **Queensland Shoulder Society Secretary**
- **University of Queensland Senior Lecturer in Orthopaedic Surgery**
- **Brisbane Private Hospital Medical Advisory Committee Member**
- **Brisbane Private Hospital Information Management Committee Member**

Mark is a member of many Australian and International societies. He presents regularly at International and National conferences and he is author and co-author of many published articles. ⊐

04 / Trade Exhibitors

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05 / Sponsors

/ THE SASSH WISHES TO THANK ALL TRADE DELEGATES FOR THEIR PARTICIPATION AND THEIR GENEROUS SPONSORSHIP

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- **STRATMED CC**
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  - Cocktail Function
  - Registration, including bags, stationery, name tags
  - Traveling and accommodation expenses of Dr M Ross

- **SYNTHES (PTY) LTD**
  - Congress Brochure
  - Traveling expenses of Dr A Gupta

- **WERKOMED (PTY) LTD**
  - Audiovisual Services □

06 / General Announcements

- **CPD REGISTER:**
- A daily register will be available at the registration desk
- Certificates will be posted to delegates

- **DRESS CODE:**
- Casual attire for congress sessions and smart casual for the social functions

- **IMPORTANT:**
- Name tags should be worn at all times. Only delegates wearing name tags will be permitted to enter the lecture hall, exhibition area and the social function
- The use of cell phones in the lecture hall is not allowed

- **INFORMATION FOR SPEAKERS:**
- Keeping to your allocated time is a courtesy to all following speakers. The chairs of the sessions have been instructed to exert tight control and interrupt lengthy presentations. Please make sure you are aware of the time allotted to you for your presentation

- Please hand your presentation to the audiovisual technicians at least 3 hours prior to the session in which the presentation is being given. They will be available in the congress venue to receive your material

- **INFORMATION / REGISTRATION:**
- The Information/Registration Desk will be situated in the Foyer of the Conference Area.
- Please feel free to visit the Desk should you require any assistance.

- **LANGUAGE:**
- The official language of the congress will be English. No simultaneous translation service will be provided.

- **SMOKING:**
- In accordance with Government Legislation regarding smoking in public

06 /

areas, kindly note that this venue is a non-smoking area.

- **TRADE EXHIBITORS:**
- Kindly make every effort to visit all the stands.
- Teas and lunches will be served in the trade exhibition areas. □

07 / Organizing Committee & Social Events

- **MICHAEL CARIDES**
- Congress Chairman

- **HENDRIKA VAN DER MERWE**
- Congress Coordinator

- **COCKTAIL FUNCTION**

- Friday,
  31 August 2007

- 17:30 – 19:00

- Injabulo Foyer,
  Indaba Hotel

- Dress: Casual

- **CONGRESS DINNER**

- Saturday,
  1 September 2007

- 19:30 for 20:00

- Ndaba Palace,
  Indaba Hotel

- Dress: Smart Casual

08 / Future Events

/ ANNUAL REFRESHER COURSES

2008	2009	2010
TOPIC	**TOPIC**	**TOPIC**
Wrist and Distal Radio-ulnar Joint	Congenital Deformities	Nerve
Biomechanics	Anatomy	Pain
Distal Radius	Microsurgery	BPI
	Biomechanics	Sudeck's
		Tendon Transfers
DATE	**DATE**	**DATE**
22-24 February	TBA	TBA
VENUE	**VENUE**	**VENUE**
Johannesburg	Durban	Cape Town

/ ANNUAL CONGRESSES

2008	2009	2010
39th Congress and Instructional Course	40th Congress and Instructional Course	41st Congress and Instructional Course
DATE	**DATE**	**DATE**
30-31 August	5-6 September	4-5 September
VENUE	**VENUE**	**VENUE**
Cape Town	Bloemfontein	Pretoria

09 / Past Presidents

- 1969-1971
  I KAPLAN
- 1971-1973
  AC BOONZAIER
- 1973-1975
  M SINGER
- 1975-1977
  JH YOUNGLESON
- 1977-1979
  TL SARKIN
- 1979-1981
  CE BLOCH
- 1981-1983
  SL BIDDULPH
- 1983-1985
  WMM MORRIS
- 1985-1987
  LK PRETORIUS
- 1987-1989
  KS NAIDOO
- 1989-1991
  SL BIDDULPH
- 1991-April 1992
  BJ VAN R ZEEMAN
- April 1992 – 1993
  SL BIDDULPH
- 1993-1995
  JH FLEMING
- 1995-1997
  U MENNEN
- 1997-1999
  EJ BOWEN-JONES
- 1999-2001
  LT DE JAGER
- 2001-2003
  JJ VAN WINGERDEN
- 2003-2005
  M CARIDES

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10 / Office Bearers

- President
  TLB LE ROUX

- Immediate Past President
  M CARIDES

- Honorary Secretary/Treasurer
  MC WELLS

- Members
  M DAYA
  U MENNEN
  M SOLOMONS

- Executive Secretary/
  Congress Co-ordinator
  HENDRIKA VAN DER MERWE

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11 / AC Boonzaier Memorial Lectures

1997 /	**PROF ULRICH MENNEN** "The Appreciation of the Hand"
1998 /	**DR JOHN YOUNGLESON** "Reminiscing the Past"
1999 /	**DR EDWARD BOWEN-JONES** "Bamba Isandla Qualities of a Leader in Hand Surgery"
2000 /	**PROF KS NAIDOO** "Overview of Hand Surgery"
2001 /	**DR LT (WIKUS) DE JAGER** "The Future of Hand Surgery in South Africa"
2002 /	**PROF SYD BIDDULPH** "The Hand – A Mirror of Disease"
2003 /	**DR JAN VAN WINGERDEN** "The Joy of Medical Discovery"
2004 /	**DR INGRAM ANDERSON** "The Hand – Cogitations of a Rheumatologist"
2005 /	**DR MICHAEL CARIDES** "But, on the other hand....."
2006 /	**PROF MICHAEL TONKIN** "On Surgeons, Heads, Hearts and Hands – A Philosophy" □

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12 / Annual General Meeting

(Members only / Slegs Lede)

/ **SATURDAY, 1 SEPTEMBER 2007, 16:30 – 17:15**
CONGRESS VENUE: Indaba Hotel, Fourways, Johannesburg

- **1**
  Welcome Address by the President
  Verwelkoming deur die President
- **2**
  Apologies and Proxies
  Verskonings en Volmagte
- **3**
  Minutes of the Previous Annual General Meeting
  Notule van die Vorige Algemene Jaarvergadering
- **4**
  Matters Arising from the Minutes
  Sake wat uit die Notule Voortspruit
- **5**
  President's Report
  President se Verslag
- **6**
  Honorary Secretary/ Treasurer's Report
  Ere-Sekretaris/Tesourier se Verslag
- **7**
  Proposed Increase in Entrance Fee and Annual Subscription
  Voorgestelde Verhoging in Intreefooi en Jaargeld
- **8**
  Announcement of Executive Committee
  Aankondiging van Uitvoerende Bestuur
- **9**
  Membership
  Lidmaatskap
- **10**
  General
  Algemeen
- **11**
  Next Annual General Meeting
  Volgende Algemene Jaarvergadering

13 / Scientific Program

FRIDAY, 31 AUGUST 2007

12:30-14:00	▸ **South African Society of Hand Therapists Cadaver Workshop: Small Joint Arthroplasties of the Hand**	/ **Venue:** Indaba Hotel
14:45-15:15	▸ **REGISTRATION**	/ **Venue:** Injabulo Conference Hall
SESSION 1	▸ **STRATMED HANDS-ON WORKSHOP**	
15:30-17:00	▸ **Pre-operative Assessment and Fixation Strategies for Distal Radius Fractures** Presented by Mark Ross, Brisbane Hand & Upper Limb Clinic, Brisbane, Australia	
17:30-19:00	▸ **Cocktail Function**	/ Injabulo Foyer

13 / Scientific Program

SATURDAY, 1 SEPTEMBER 2007

07:30-08:00	▸ **REGISTRATION**	/ Injabulo Conference Hall
08:05-08:15	▹ Welcome and announcements	
SESSION 2	▸ **CHAIRMAN: PROF THEO LE ROUX**	
08:15-08:35	▸ **Evolution of the Management of Distal Radius Fractures**	/ A Gupta
08:35-08:45	▹ Discussion	
08:45-08:55	▸ **FDP Avulsion: A 5th Group should be added to the Classification**	/ M Solomons, S Carter
08:55-09:00	▹ Discussion	
09:00-09:10	▸ **A Clinical and Literature Review of the Use of Sympathectomies in Raynaud's Phenomenon**	/ P Hayes, S Carter, M Solomons
09:10-09:15	▹ Discussion	
09:15-09:25	▸ **The Incidence of Asymptomatic Kienbock's Disease**	/ H Sithebe, U Mennen
09:25-09:30	▹ Discussion	
09:30-09:40	▸ **A Modified Louisville Approximator Frame for Epineural Microneurorraphy**	/ M Murdoch
09:40-09:45	▹ Discussion	
09:45-09:55	▸ **The Risk of Displacement in Conservatively treated Condylar Phalangeal Fractures**	/ AA Smit, A Tambe, P Sonsale, DN Quinton
09:55-10:00	▹ Discussion	
10:00-10:10	▸ **Boxer's Knuckle: Correlating Pathology with Treatment and Proposal of a New Working Classification**	/ EM Carides, PI Webster, UNF Ukunda
10:10-10:15	▹ Discussion	
10:15-10:45	▸ **TEA**	

13 / Scientific Program

SATURDAY, 1 SEPTEMBER 2007

SESSION 3	▸ **CHAIRMAN: DR MARTIN WELLS**	
10:45-10:55	▸ **Radial Tunnel Syndrome: A Review of 10 Cases Treated with a New Transbrachialis Surgical Decompression Technique**	/ S Carter
10:55-11:00	▹ Discussion	
11:00-11:10	▸ **Functional Wrist Arthrodesis**	/ U Mennen
11:10-11:15	▹ Discussion	
11:15-11:25	▸ **Atypical Neurological Presentations at the Hand Clinic**	/ M Solomons
11:25-11:30	▹ Discussion	
11:30-11:40	▸ **Results of Ulnar Shortening Osteotomy using the Stanley Cutting Jig**	/ AA Smit, A Tambe, S Sinha, C Heras-Palou
11:40-11:45	▹ Discussion	
11:45-11:55	▸ **The Use of the Snow & Littler Procedure in the Surgical Management of the Typical Cleft Hand.** A Review over the past 4 Years at Red Cross Hospital	/ S Carter
11:55-12:00	▹ Discussion	
12:00-12:10	▸ **Fixation of Distal Biceps Ruptures using the Endobutton: A Modified Technique**	/ M Ross
12:10-12:15	▹ Discussion	
12:15-12:35	▸ **Extreme Reconstructions**	/ A Gupta
12:35-12:45	▹ Discussion	
12:45-13:30	▸ **LUNCH**	

13 / Scientific Program

SATURDAY, 1 SEPTEMBER 2007

SESSION 4	▸ CHAIRMAN: DR MICHAEL CARIDES	
13:30-13:50	▸ Variable Angle Locked Volar Plating in Distal Radius Fractures	/ M Ross
13:50-14:00	▹ Discussion	
14:00-14:10	▸ Salvage Ulnar Head Replacement for Failed Resection Arthroplasty of the DRUJ	/ AA Smit, JK Stanley et al
14:10-14:15	▹ Discussion	
14:15-14:25	▸ Firecracker Injuries of the Hand – New Year 2007 with a Bang	/ B Gelbart, UNF Ukunda, J Muller, W Stuart
14:25-14:30	▹ Discussion	
14:30-14:40	▸ Proposal of Working Classification for STT Arthritis	/ J van der Westhuizen, U Mennen
14:40-14:45	▹ Discussion	
14:45-14:55	▸ The Osteogenic Potential of Xenogeneic (Porcine) Bone Morphogenetic Proteins in Gunshot Defects of Metacarpals	/ M Murdoch, C Wittstock et al
14:55-15:00	▹ Discussion	
15:00-15:30	▸ **TEA**	

13 / Scientific Program

SATURDAY, 1 SEPTEMBER 2007

SESSION 5	▸ **CHAIRMAN: PROF ULRICH MENNEN**	
15:30-15:50	▸ **Local and Regional Flaps in the Hand**	/ A Gupta
15:50-16:00	▹ Discussion	
16:00-16:10	▸ **Benign Intrinsic Tightness – An Underdiagnosed Symptomatic Condition**	/ L Dawe, M Solomons
16:10-16:15	▹ Discussion	
16:15-16:25	▸ **Revision Total Shoulder Replacement of the Painful Humeral Head Replacement**	/ AA Smit, IA Trail, LG William, J Martin
16:25-16:30	▹ Discussion	
16:30-17:15	▸ **ANNUAL GENERAL MEETING** (members only)	
19:30 for 20:00	▸ **SASSH BANQUET** After dinner talk: "The Leonardo Code and the Hand"	/ Ndaba Palace / A Gupta

13 / Scientific Program

SUNDAY, 2 SEPTEMBER 2007

08:00-08:30	▸ **REGISTRATION**	
SESSION 6	▸ **CHAIRMAN: DR MAHENDRA DAYA**	
08:30-08:50	▸ Wrist Arthritis	/ A Gupta
08:50-09:00	▹ Discussion	
09:00-09:20	▸ Wrist Salvage (PRC, Limited Wrist Fusions, Total Wrist Fusion, Other Alternatives)	/ M Ross
09:20-09:30	▹ Discussion	
09:30-09:50	▸ Ulnar Sided Wrist Pain	/ A Gupta
09:50-10:00	▹ Discussion	
10:00-10:30	▸ **TEA**	
SESSION 7	▸ **CHAIRMAN: DR MICHAEL SOLOMONS**	
10:30-10:50	▸ Repair and Reconstruction of the PIP Joint	/ A Gupta
10:50-11:00	▹ Discussion	
11:00-11:15	▸ Pyrocarbon PIP Joint and MCP Joint Hemi-Arthroplasty	/ M Ross
11:15-11:20	▹ Discussion	
11:20-11:40	▸ Mal-unions in the Hand	/ A Gupta
11:40-11:50	▹ Discussion	
11:50-12:30	▸ **AC BOONZAIER LECTURE**	/ T Le Roux
12:30-13:30	▸ **LUNCH**	

13 / Scientific Program

SUNDAY, 2 SEPTEMBER 2007

SESSION 8	▸ **CHAIRMAN: DR JOHAN VD WESTHUIZEN**	
13:30-13:40	▸ **Ring Avulsion Injuries**	/ A Gupta
13:40-13:45	▹ Discussion	
13:45-14:00	▸ **Delayed and Non-unions in the Upper Extremity**	/ A Gupta
14:00-14:05	▹ Discussion	
14:05-14:20	▸ **Coverage of Small Defects in the Hand**	/ M Ross
14:20-14:25	▹ Discussion	
14:25-14:35	▸ **The Stiff Elbow**	/ A Gupta
14:35-14:40	▹ Discussion	
14:40-14:50	▸ **Therapy following MP and PIP Pyrocarbon Arthroplasty**	/ A Lund
14:50-14:55	▹ Discussion	
14:55-15:00	▸ **CLOSURE**	□

14 / Abstracts

▸ **FRIDAY** ▸ 31 AUGUST 2007

▸ **SESSION 1** ▸ 15:30-17:00

TITLE / **PREOPERATIVE EVALUATION AND DECISION MAKING FOR DISTAL RADIUS FRACTURES**

Author(s) / *Mark Ross*

▸ Internal fixation of distal radius fractures has become more frequent with the advent of advanced fixation systems including fragment specific systems and angle stable volar plates. The availability of these implants has coincided with an increased understanding of the fragmentation patterns common to many fractures.

A clear understanding of these patterns and how they relate to mechanism of injury and ultimate position of union is essential in decision making, both with regard to whether to internally fix a fracture and which type of implant to use.

This talk and workshop will outline the key issues that need to be taken into account in pre- and intra-operative decision making, including mechanism of injury, fragmentation patterns, stability and expected progression. □

14 / Abstracts

▸ **SATURDAY** ▸ 1 SEPTEMBER 2007

▸ **SESSION 2** ▸ 08:45-08:55

TITLE / **FDP AVULSION - A 5TH GROUP SHOULD BE ADDED TO THE CLASSIFICATION**

Author(s) / *Dr M Solomons and Dr S Carter*

▸ The authors present 3 cases of FDP avulsions that do not fit into the standard Leddy and Packer classification system. Clinical picture, Xrays and Ultrasound will be presented together with intra operative findings. □

14 / Abstracts

- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 2** ▸ 09:00-09:10

TITLE / **DIGITAL SYMPATHECTOMIES:** A CLINICAL AND LITERATURE REVIEW OF THE USE OF SYMPATHECTOMIES IN RAYNAUD'S PHENOMENON

Author(s) / *P Hayes, S Carter, M Solomons*

- **BACKGROUND:** Raynaud's phenomenon is caused by intense vasospasm of the peripheral arteries of the fingers, toes and occasionally the ears and nose.

  Causes of Raynaud's phenomenon include occupational exposure to cold or vibrating tools, ingestion of vasoconstrictive drugs and a variety of autoimmune conditions. Idiopathic Raynaud's phenomenon is called Raynaud's disease.

- **AIM AND DESIGN:** A retrospective review of the results of digital sympathectomies in patients with critical ischaemia secondary to Raynaud's phenomenon. □

14 / Abstracts

- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 2** ▸ 09:15-09:25

TITLE / **THE INCIDENCE OF ASYMPTOMATIC KIENBOCK'S DISEASE**

Author(s) / *Dr H Sithebe, Prof U Mennen*

- The aim of our study was to determine the incidence of Kienbock's Disease in patients who attended the Dr. George Mukhari Hospital [formerly : Ga-Rankuwa Hospital].

We reviewed postero-anterior x-rays of the wrists of 1287 patients [734 ie. 57% were male and 553 ie. 43% were female], seen at our Radiology Department between December 1986 to December 1987, with complaints unrelated to the upper limb including the wrist and hand.

We identified 23 cases [1.87%] of Kienbock's disease. Fourteen cases [63%] were male with an average age of 49 years, and 9 [37%] were female with an average age of 46.5 years. All were unilateral and all were in the dominant hand. Thirteen cases [57%] had an ulna neutral wrist and the remaining 10 [43%] had an ulna negative variance. The vast majority [83%] were unemployed.

From our study we could deduct with reasonable confidence that a 1.87% incidence of asymptomatic Kienbock's disease is present in the African population. Analysis of the data shed no further light on the aetiology, nor on the relevance of ulna variance or occupation. □

14 / Abstracts

- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 2** ▸ 09:30-09:40

TITLE / **A MODIFIED LOUISVILLE APPROXIMATOR FRAME FOR EPINEURAL MICRONEURORRAPHY**

Author(s) / *Dr Marshall Murdoch*

- **INTRODUCTION:** Ingenious nerve approximating devices have previously been described by Van Beek, Pener, Kamath and Bayramiçli. All these devices have two potential areas where inadvertent damage may occur. Firstly, the epineurium is punctured by needles or hooks some distance from the repair site, which may lead to epineural scarring and Wallerian degeneration if a deeper than intended puncture occurs. Secondly, the slide bar for approximation may lead to unrecognized tension across the repair site.

- **METHODS:** I have modified a Louisville Approximator that circumvents the aforementioned areas. The nerve stumps are prepared and approximated with two 8/0 nylon sutures. Inability of the initial sutures to overcome retraction is regarded as evidence of excessive tension and primary repair is abandoned. Only then is the frame positioned under the nerve, with the stump ends cradled in the groove. The stay sutures are belayed onto the cleats with sufficient tension to hold the nerve taut. The anterior wall is repaired before the frame is rotated to expose the reverse side. Conveniently, the groove now acts as two retaining bars to prevent perpendicular movement during the reverse side repair. Once the repair has been completed, the stay sutures are cut and the frame removed without re-rotation, minimizing nerve trauma and potential suture disruption.

- **CONCLUSION:** This method is fundamentally different in that it is only applied once the potential for a tension-free repair is established, and the approximation is maintained by repair site stay sutures, sparing the adjacent epineurium. □

14 / Abstracts

- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 2** ▸ 09:45-09:55

TITLE

/ THE RISK OF DISPLACEMENT IN CONSERVATIVELY TREATED CONDYLAR PHALANGEAL FRACTURES

Author(s)

/ AA Smit, A Tambe, P Sonsale, DN Quinton

- **AIMS OF STUDY:** A radiological review of condylar phalangeal fractures of the hand was conducted to assess the incidence and behaviour of different fracture configurations and to identify those fractures prone to early or late displacement if treated conservatively.
- **METHOD:** Seventy cases met the inclusion criteria. X-rays were simultaneously reviewed by the first two authors. Unacceptable displacement was defined as an articular step-off or gap of more that one millimeter. Fractures were classified according to the London (1971) and Weiss & Hastings (1993) systems with 56 percent of fractures being unclassifiable in the latter. There were six London I fractures, twenty-eight London IIA fractures, thirteen London IIB fractures and twenty-eight London III fractures.
- **RESULTS:** None of three reduced London I fractures, three of twelve reduced London IIA fractures, three of six reduced London IIB fractures and none of five reduced London III fractures treated conservatively developed late displacement. Three of four Weiss & Hastings long sagittal fractures developed late displacement. Splinting failed to reduce any displaced London I, IIA or IIB fractures.
- **CONCLUSION:** We recommend routine internal fixation of displaced London I and II fractures, all London IIB, long sagittal and dislocated condylar phalangeal fractures. □

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- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 2** ▸ 10:00-10:10

TITLE / **BOXER'S KNUCKLE:** CORRELATING PATHOLOGY WITH TREATMENT AND PROPOSAL OF A NEW WORKING CLASSIFICATION

Author(s) / *EM Carides, PI Webster, UNF Ukunda*

- **INTRODUCTION AND AIMS:** Trauma to the metacarpal heads may result in injury to the extensor hood of the metacarpophalangeal joint. Gladden (1957) first described this injury and classified it into four types. Although another classification was proposed by Rayan and Murray, both systems show poor correlation of pathology with treatment. The aim of this study is to report our results on surgical treatment and to propose a working classification for the management of these injuries.

- **METHOD:** Thirteen patients who underwent surgery for chronic symptoms were retrospectively reviewed. The group consisted of 10 males and 3 females with an average age of 27 (range 19 – 45) years. Pathology included the entire spectrum of injuries from tenosynovitis to complete disruption with dislocation of the extensor mechanism. Treatment consisted of tenosynovectomy in one case, repair of the extensor hood in 10 cases and free tendon graft in two cases

- **RESULTS:** All the patients were satisfied with their outcome. None had persistent pain and there was no residual joint stiffness or swelling present three months postoperatively. There were no postoperative complications.

- **CONCLUSION:** Boxer's knuckle treated operatively yields excellent results. Treatment must, however, correlate with pathology. A useful new working classification for the treatment of these injuries is presented. □

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- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 3** ▸ 10:45-10:55

TITLE / **RADIAL TUNNEL SYNDROME: A REVIEW OF 10 CASES TREATED WITH A NEW TRANSBRACHIALIS SURGICAL DECOMPRESSION TECHNIQUE**

Author(s) / *Steve Carter*

- This study looks at the results of 10 cases of Radial Tunnel Syndrome or posterior interosseous nerve compression.

The presentation, indications and a novel surgical tecnique, "The Transbrachioradialis Approach" is described.

We also describe a new test "The supinator fatigue test" in making the diagnosis. □

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▸ **SATURDAY** ▸ 1 SEPTEMBER 2007

▸ **SESSION 3** ▸ 11:00-11:10

TITLE / **FUNCTIONAL WRIST ARTHRODESIS**

Author(s) / *Prof Ulrich Mennen*

▸ Traditionally wrist fusion included the radius, central carpal bones and the second/third metacarpals.

Functional wrist fusion challenges this concept.

If the carpo-metacarpal joints are not arthritic, these should not be included in the fusion.

This has a number of advantages, amongst others, some "wrist" motion, which is much appreciated by patients.

The "Spoon" plate is an ideal implant to achieve functional wrist arthrodesis. □

14 / Abstracts

- **SATURDAY** ▷ 1 SEPTEMBER 2007
- **SESSION 3** ▷ 11:15-11:25

TITLE / **ATYPICAL NEUROLOGICAL PRESENTATIONS AT THE HAND CLINIC**

Author(s) / *M Solomons*

- 2 patients referred as carpal tunnel syndrome were found to have proximal malignant lesions. One patient was referred as a Saturday night palsy and was noted to have more extensive neurology. A breast Ca with axillary nodes was diagnosed. A young girl was referred as cubital tunnel syndrome and was eventually diagnosed with a more sinister condition. Especially in a busy clinic situation meticulous examination is necessary to avoid misdiagnosis. □

14 / Abstracts

- **SATURDAY** ▹ 1 SEPTEMBER 2007
- **SESSION 3** ▹ 11:30-11:40

TITLE / **RESULTS OF ULNAR SHORTENING OSTEOTOMY USING THE STANLEY CUTTING JIG**

Author(s) / *AA Smit, A Tambe, S Sinha, C Heras-Palou*

- **AIMS OF STUDY:** Ulnocarpal abutment is usually well managed by ulnar shortening. This is a technically challenging operation that needs to be precise. The Stanley jig was designed to make this a simple and accurate procedure.
- **METHOD:** We report on a minimum 2 year follow-up of 39 ulnar shortenings before and after introduction of the Stanley jig, over an eight year period. All patients were managed post-operatively in a sugar-tong splint for 2 weeks and another 2-3 weeks in a forearm cast. Patients were assessed at 2 week intervals until union and 3-monthly thereafter.
- **RESULTS:** The planned amount of shortening was achieved in all cases using the jig, but in the freehand group it was variable. The mean time to radiological union was 15 weeks. Non-union was noted in 4 of 12 free-hand cases and there was one delayed union in each group. Fixation revision was required in 2 jig cases due to avoidable technical problems. Three of four non-unions underwent successful revision with iliac bone grafting and DCP plating.
- **CONCLUSION:** Free-hand ulnar shortening osteotomy had a high complication rate, while the Stanley jig provided a reliable way of achieving a predetermined amount of ulnar shortening in 27 cases. □

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▸ **SATURDAY** ▸ 1 SEPTEMBER 2007

▸ **SESSION 3** ▸ 11:45-11:55

TITLE / **THE USE OF THE SNOW & LITTLER PROCEDURE IN THE SURGICAL MANAGEMENT OF THE TYPICAL CLEFT HAND:** A REVIEW OVER THE PAST 4 YEARS AT RED CROSS HOSPITAL

Author(s) / *Steve Carter*

▸ Red Cross Childrens Hospital Congenital hand unit is the only tertiary referral centre for the whole Cape Province.

The unit sees approx 960 patients per year.

We would like to present our experience with the management of the typical cleft hands over the past 4 years.

We have seen 20 typical cleft hands and of these we have operated on 6 patients.

This study will describe the use of the Snow & Littler procedure. The indications intra operative details, complications and results will be discussed. □

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SATURDAY 1 SEPTEMBER 2007

SESSION 3 12:00-12:10

TITLE / **FIXATION OF DISTAL BICEPS RUPTURES USING THE ENDOBUTTON: A MODIFIED TECHNIQUE**

Author(s) / *[1,2]K Cutbush MBBS FRACS (Orth), [1]C Roberts FRCS (Tr & Orth), [1,2]P Duke MBBS FRACS (Orth), [3]M Mitchell BPhty, Dip Hand & UL Rehab, [1,2]M Ross MBBS FRACS (Orth)*

SUMMARY: This paper reviews thirty-two patients who underwent operative fixation of distal biceps ruptures. All patients were clinically reviewed at a minimum of 6 months (average 29 months) from surgery. The operative technique utilised the Endobutton (Smith and Nephew) and is a substantial modification of that published by Bain, G et al[1]. Thirty of the thirty-two patients have returned Patient Rated Elbow Evaluation (PREE) forms with an average score of 8. Cybex testing demonstrates good return of strength when compared to the uninjured side. We believe that these modifications to Dr Bain's technique offer a viable alternative technique which has some benefits.

INTRODUCTION: Distal biceps ruptures are an uncommon injury. They represent approximately 3% of all biceps ruptures. They most commonly occur in middle aged men following a heavy load on a flexed elbow.

Intervention was popularised by Boyd and Anderson who described a two-incision technique. Improved outcomes have been achieved with stronger fixation allowing earlier mobilisation.

MATERIALS AND METHODS: Thirty-two patients who underwent operative fixation of distal biceps ruptures by the senior two authors were identified. All patients were clinically reviewed at a minimum of 6 months (average 29mths) from surgery. Functional outcome scores in the form of Patient Rated Elbow Evaluation (PREE) and DASH scores were assessed.

The operative technique utilised the

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Endobutton (Smith and Nephew) and is a substantial modification of that published by Bain, G et al[1].

OPERATIVE TECHNIQUE: The operations were performed under general anaesthetic. The first step is to perform a small transverse incision proximal to the cubital fossa over the distal end of the biceps muscle to retrieve the biceps tendon. The tendon is prepared by excision of scar tissue, where necessary in delayed cases, from the tendon to regain tendon length. Next the tendon is prepared by suturing an endobutton to the distal end of the tendon using size 2 Fibrewire (Size 5 Ethibond, as used in the initial part of this series has a similar strength). The sutures are commenced proximally and weaved down the tendon in a Bunnell type pattern, through the central 2 holes in the endobutton and back up the tendon. Two sutures are used giving 4 strands. Knots are placed proximally in the tendon rather than between the endobutton and the tendon. The endobutton is positioned so that it is 3-4mm from the end of the tendon. Great care must be taken to ensure that the sutures are tensioned prior to knot tying otherwise the endobutton will end up too far from the tendon end when pulled on. Next a proximal Henry's approach to the bicipital tuberosity is performed through a short longitudinal incision. A 4.5mm drill hole is then drilled through the footprint of the biceps insertion and out the far cortex. A Burr is used to enlarge the proximal hole in the radius to accept the biceps tendon. Supinator is elevated along the anterior oblique line to expose the drill hole so as to allow flipping of the endobutton under direct vision. A suture passer is then used to retrieve the passing sutures that had previously been placed through

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the endobutton on either end. The endobutton is passed through the burr hole in the posterior part of the bicipital tuberosity then through the drill hole and then flipped securing the biceps tendon within the bicipital tuberosity. Postoperatively the patients begin an immediate active rehabilitation program.

RESULTS: Thirty one patients were identified. All patients were male with an average age of 47. Average delay to surgery was 24 days. There were no post-operative complications and no repeat ruptures.

Thirty patients have returned Patient Rated Elbow Evaluation (PREE) forms with an average score of 8. Cybex testing demonstrates good return of strength when compared to the uninjured side.(figure 2,3)

There only one case with loss of range of motion which was decreased supination due to a concomitant DRUJ injury.

CONCLUSIONS: This technique utilises some significant modifications from the original technique described by Dr Greg Bain[1]. We believe that these modifications offer a viable alternative technique which has some benefits.

The first benefit relates to the use of two incisions. The proximal incision can be made very small and in fact this incision can be made before the tourniquet is inflated. This allows retrieval of the avulsed tendon and application of downward tension on the muscle tendon unit prior to inflation of the tourniquet. This decreases incarceration of the biceps muscle belly under the tourniquet and makes it easier to insert the tendon into the radius. In addition it is also easier in subacute/chronic cases to

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free up scar tissue around the biceps muscle tendon unit through this more proximally placed incision. Also the formation of the endobutton / suture / tendon construct is somewhat easier because the entire tendon is visible up to the muscle tendon junction and the suturing and positioning of the endobutton is done external to the patient rather than within the wound. It also allows placement of the suture knots in the proximal end of the tendon rather than between the tendon and the endobutton, which we believe is biomechanically more secure.

At the distal end the main difference is stripping of the supinator muscle to allow passage and seating of the endobutton under direct vision. This eliminates the need for intra-operative fluoroscopy and the use of a Beath pin. We have found that with an adequate release of the supinator along the anterior oblique line of the radius, as described in Henry's original approach with sub-periosteal elevation of the supinator, that there is minimal trauma to the supinator. We have used Indomethacin for prophylaxis against heterotopic ossification except when medically contra-indicated and we have not noted any significant problems with loss of rotation range due to formation of heterotopic ossification.

We believe that endobutton fixation is a major advance in the reconstruction of these biceps injuries and it has allowed us to reattach biceps avulsions up to two years following initial injury with good results. Our endobutton construct may be biomechanically superior to that used by Dr Bain and we believe that our modification aids in deployment of the endobutton-tendon construct. □

REFERENCES:

1.
BAIN G, PREM H, HEMPINSTALL RJ, VERHELLEN R, PAIX D. *Repair of distal biceps tendon rupture: a new technique using the Endobutton.* J Shoulder Elbow Surg 9(2) 120-6, 2000.

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- **SATURDAY** ▹ 1 SEPTEMBER 2007
- **SESSION 4** ▹ 13:30-13:50

TITLE / **VARIABLE ANGLE LOCKED VOLAR PLATING IN DISTAL RADIUS FRACTURES**

Author(s) / *Mark Ross*[1]

- **INTRODUCTION:** Interest in locked volar plating of distal radius fractures has grown enormously over the last 5 years. Indications for this technique have expanded with the use of a new plate that allows variable screw angulation but still has angular stability. The major technical benefits of variable screw angulation will be discussed and outcomes from the initial utilization of this type of implant are presented.

- **METHODS:** 27 consecutive distal radius fractures were followed prospectively with recording of subjective (PRWE) and objective and radiographic outcome measures. Using the AO classification there were 5 A3, 2 C1, 12 C2 and 8 C3 fractures. 22 were high energy fractures.

- **RESULTS:** Mean average flexion was 68° (55-85) and extension was 69° (50-85). Mean supination was 82° (72-90) and pronation was 86°(75-90). Average palmar tilt was restored to +5° and radial inclination to 21°. Average ulnar variance was -1mm.

- **DISCUSSION:** These results compare very favourably with published data for similar series of fractures. We have been able to deal with a greater range of fractures with a variable angle locked plate than was possible with a fixed angle device. In addition technical manouvres possible with such a device which improve fracture management are discussed. Operative time has also been reduced when compared to other techniques utilized in our unit for more complex fractures. □

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- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 4** ▸ 14:00-14:10

TITLE

/ SALVAGE ULNAR HEAD REPLACEMENT FOR FAILED RESECTION ARTHROPLASTY OF THE DRUJ

Author(s)

/ JK Stanley, SC Talwalkar, N Roy, IA Trail, L Gwilliam, J Martin, AA Smit

- **AIM OF STUDY:** Excessive ulnar head resection leads to instability, impingement and severe loss of function. This is a difficult situation to salvage with few treatment options. Ulnar head replacement has proven to be a good option. This study assesses the outcome of our salvage ulnar head replacements.
- **METHOD:** Fifty five patients with 57 prostheses (twenty-three after trauma, thirteen inflammatory, five with osteoarthritis and ten others, including ulna positive variance) with a minimum 2 year follow-up were available for questionnaire or clinical review. They were assessed with visual analog scales (VAS), the Wrightington wrist score and x-ray review.
- **RESULTS:** Patients had previously undergone thirty-three Darrach resections, ten Sauve-Kapandji procedures, five matched ulna resections and five ulnar shortenings. There were seventeen wrist fusions, two wrist replacements and two Chamay fusions in situ. Significant improvement was shown on both VAS and Wrightington scores. Nineteen patients needed further surgery. Flexion arc was 67 percent, rotation 81 percent and power grip 65 percent of the normal contralateral wrist. Three cases with progressive ulnar resorption and six with major radial scalloping were observed.
- **CONCLUSION:** Ulnar head replacement is a satisfactory salvage procedure for a complex problem. Further procedures are however often necessary. □

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- **SATURDAY** ▹ 1 SEPTEMBER 2007
- **SESSION 4** ▹ 14:15-14:25

TITLE / **FIRECRACKER INJURIES OF THE HAND (NEW YEAR 2007 WITH A BANG)**

Author(s) / *BR Gelbart, UNF Ukunda, J Muller, W Stuart*

A growing tradition among the residents of Johannesburg, is to light firecrackers to welcome in the New Year. Despite legal limitations on the sale of these explosives, firecrackers, and the larger fireworks, are freely available.

The Hand unit at Baragwanath hospital treated 34 patients who sustained blast injury due to firecrackers.

The injuries were sustained by patients of all ages.

The majority of injuries were to the dominant hand in most patients. Twenty-four patients injured 3 or more fingers with some fingers having more than 1 separate injury. Twenty-one patients ended up with tissue loss of one or more digits.

Thirty patients were debrided and/or repaired within 5 days of the injury.

Three patients did not return for follow up, 2 patients developed localized wound sepsis and required redebridement, and a further 3 patients required extended follow up for dressings. The remainder of the wounds healed uneventfully.

Despite adequate wound healing, the functional loss and side effects of these injuries are long lasting or permanent. Social, legal and enforcement solutions are essential for the adequate resolution of this problem. □

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- **SATURDAY** ▷ 1 SEPTEMBER 2007
- **SESSION 4** ▷ 14:30-14:40

TITLE / **PROPOSAL OF WORKING CLASSIFICATION FOR STT ARTHRITIS**

Author(s) / *Johan van der Westhuizen, Ulrich Mennen*

- **1.**
The etiology of STT arthritis still remains unclear. Associated conditions, such as CMC arthritis and scapholunate ligament ruptures, may influence the outcome of our surgical treatment. The surgical treatment of STT arthritis may be divided into procedures that restrict movement, STT fusion, and procedures that maintain movement, excision of the distal part of the scaphoid. We propose a classification of STT arthritis based on the etiological factors, as well as the associated conditions.

- **2.**
  -> Type I STT arthritis with no other joint involvement
  -> Type II STT arthritis with CMC arthritis
  -> Type III STT arthritis with scapholunate ligament involvement
  -> Type IV STT arthritis with radiocarpal arthritis

- **3.**
We will discuss the different surgical treatment options for each group and explain how this can be helpful in our day-to-day practice. □

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- **SATURDAY** ▹ 1 SEPTEMBER 2007
- **SESSION 4** ▹ 14:45-14:55

TITLE

/ THE OSTEOGENIC POTENTIAL OF XENOGENEIC (PORCINE) BONE MORPHOGENETIC PROTEINS IN GUNSHOT DEFECTS OF METACARPALS

Author(s)

/ Marshall Murdoch[1], C Wittstock[1], S Govender[2], G Psaras[1], A Widgerow[1], M Lukhele[3], B Rothman[4], J Snyman[5], J Hutchings[4], P Becker[7], E Marcos[1] and N Duneas[6*]*

- **INTRODUCTION:** Bone morphogenetic proteins (BMPs) are potent inducers of bone formation, playing important roles in embryonic bone formation as well as postnatal regeneration. The BMPs belong to the larger transforming growth factor-β superfamily of morphogens and interact synergistically and in a concerted fashion with each other during the morphogenesis of bone.
- **METHODS:** We have purified an osteogenic complex from porcine cortical bone that contains a number of morphogenetic proteins. A porcine bone, telopeptide-depleted collagen matrix with reduced immunogenicity and improved biocompatibility was prepared as a delivery system (Altis Osteogenic Bone Matrix™). 2 Cases of metacarpal bone defects secondary to gunshot wounds are presented. The Altis OBM™ was introduced into the bone voids at the time of bony fixation. Clinical, biochemical and radiological follow up was done at 6 and 12 weeks.
- **RESULTS:** At 6 weeks, there was good soft tissue healing and early evidence of bone formation. At 12 weeks, cortical bridging was radiographically evident and in one recipient the metacarpal had remodelled to the original anatomical profile. No adverse events or reactions to the implanted biomaterial were recorded during the study period of 3 months.
- **CONCLUSION:** These cases suggest that this novel porcine BMP complex may represent a safe and effective osteogenic biomaterial for traumatic long bone defects. ▹

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- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 5** ▸ 16:00-16:10

TITLE / **BENIGN INTRINSIC TIGHTNESS – AN UNDERDIAGNOSED SYMPTOMATIC CONDITION.**

Author(s) / *Ms Liane Dawe, Dr M Solomons*

This paper will show the clinical presentation of a patient who was seen at the clinic complaining of bilateral hand pain.

A diagnosis of intrinsic muscle tightness was made and the patient has responded well to an exercise programme.

The aim of the study was to identify intrinsic muscle tightness in keyboard users in which the hand is held in an intrinsic minus position. Patients present with pain and fatigue in the hands and an inability to carry out work and leisure activities for any length of time before becoming symptomatic.

Specific exercise and postural/ergonomic correction appear to be successful in long term management and suggest that early identification facilitates treatment. □

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- **SATURDAY** ▸ 1 SEPTEMBER 2007
- **SESSION 5** ▸ 16:15-16:25

TITLE / **REVISION TOTAL SHOULDER REPLACEMENT OF THE PAINFUL HUMERAL HEAD REPLACEMENT**

Author(s) / *AA Smit, IA Trail, JF Haines, R Conlon*

- **AIM OF STUDY:** Painful humeral head replacement remains the most frequent indication for revision total shoulder replacement. We have assessed the outcome of these revisions in our unit and have identified factors at revision that lead to a poor outcome. We have also identified certain factors that predispose to painful hemi-arthroplasty.
- **METHOD:** Seventeen painful humeral head replacements with a functional rotator cuff and without instability were identified over a ten year period, with a minimum 2 year follow-up in fifteen. Assessment was done using both Neer's criteria and the Constant-Murley score.
- **RESULTS:** Glenoid erosion, seen in all cases, warranted correction by eccentric reaming in one and iliac crest reconstruction in three cases. Altered humeral version failed to compensate for eccentric glenoid erosion. Furthermore incorrect humeral version was revised in four cases with three unsatisfactory outcomes and two humeral fractures. Seven prostheses were down-sized while two were up-sized at revision.
- **CONCLUSION:** A 75 percent success rate with revision total shoulder replacement was sustained at two year follow-up. Glenoid reconstruction is a complex but effective option for severe eccentric erosion. Changed humeral version at revision leads to unsatisfactory results. Care must be taken to avoid overstuffing the joint at primary surgery. □

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- **SUNDAY** ▹ 2 SEPTEMBER 2007
- **SESSION 6** ▹ 09:00-09:20

TITLE / **WRIST SALVAGE (PRC , LIMITED WRIST FUSIONS , FULL WRIST FUSION)**

Author(s) / *Mark Ross*

- **MOTION SPARING**
- PRC
- Partial Fusions

- **PRC**
- Preserved
  -> Lunate fossa
  -> Proximal Capitate

- **PRC**
- Scaphoid pathology
- SLAC wrist
- Kienboch's Disease

- **PRC TECHNICAL ISSUES**
- Partial denervation
- Approach
  -> Longitudinal
  -> Capsular incision

- **LIMITED WRIST FUSIONS**
- STT fusion
- 4 corner + E/O Scaphoid

- **4 CORNER + E/O SCAPHOID**
- Scaphoid pathology
- SLAC wrist
- Midcarpal OA
- Not Kienboch's disease

- **STT FUSION**
- STT Arthritis
- ?? SLAC wrist

- **4 CORNER FUSION TECHNICAL ISSUES**
- E/O trapezium (3 corner)
- "Closing" fusion
- Implant choice
  -> Circular plates
  -> Compression screws
  -> Staples

- **4 CORNER FUSION TECHNICAL ISSUES**
- Plate recessing
- Lunate reduction
- Thorough joint reduction

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- **TOTAL WRIST FUSION**
- Arthritis
- Instability
- Neuromuscular
- Salvage

- **COMPLICATIONS**
- Non Union
- PlateRemoval
- Infection
- Persistent pain
- Screw Failure
- Tendon Irritation
- Paraethesia

- **TOTAL FUSION TECHNICAL ISSUES**
- "Closing" fusion
- Bone graft from Lister's tubercle
  -> Easier plate seating
- E/O trapezium
- 3rd CMCJ fusion versus routine plate removal □

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SUNDAY ▹ 2 SEPTEMBER 2007

SESSION 7 ▹ 11:00-11:15

TITLE / **PYROCARBON PIPJ and MCPJ HEMIARTHROPLASTY**

Author(s) / *Dr G Couzens, Dr N Hussain, Dr D Gilpin, and Dr M Ross*

INTRODUCTION: Unilateral joint destruction in small joints of the hand presents a difficult challenge, particularly in younger patients. In our unit we have utilised many modern techniques in an attempt to salvage motion whilst preserving the native joint following injury.

Such techniques have included:
-> DIPJ to PIPJ transfer
-> Hamate osteochondral graft
-> Free vascularized toe joint transfer

We consider fusion and amputation to be fairly undesirable.

Nevertheless, there are certain clinical circumstances where the joint cannot be salvaged with either normal fixation techniques or the above reconstructive techniques.

We felt that small joint pyrocarbon hemiarthroplasty may offer a viable alternative to fusion or amputation.

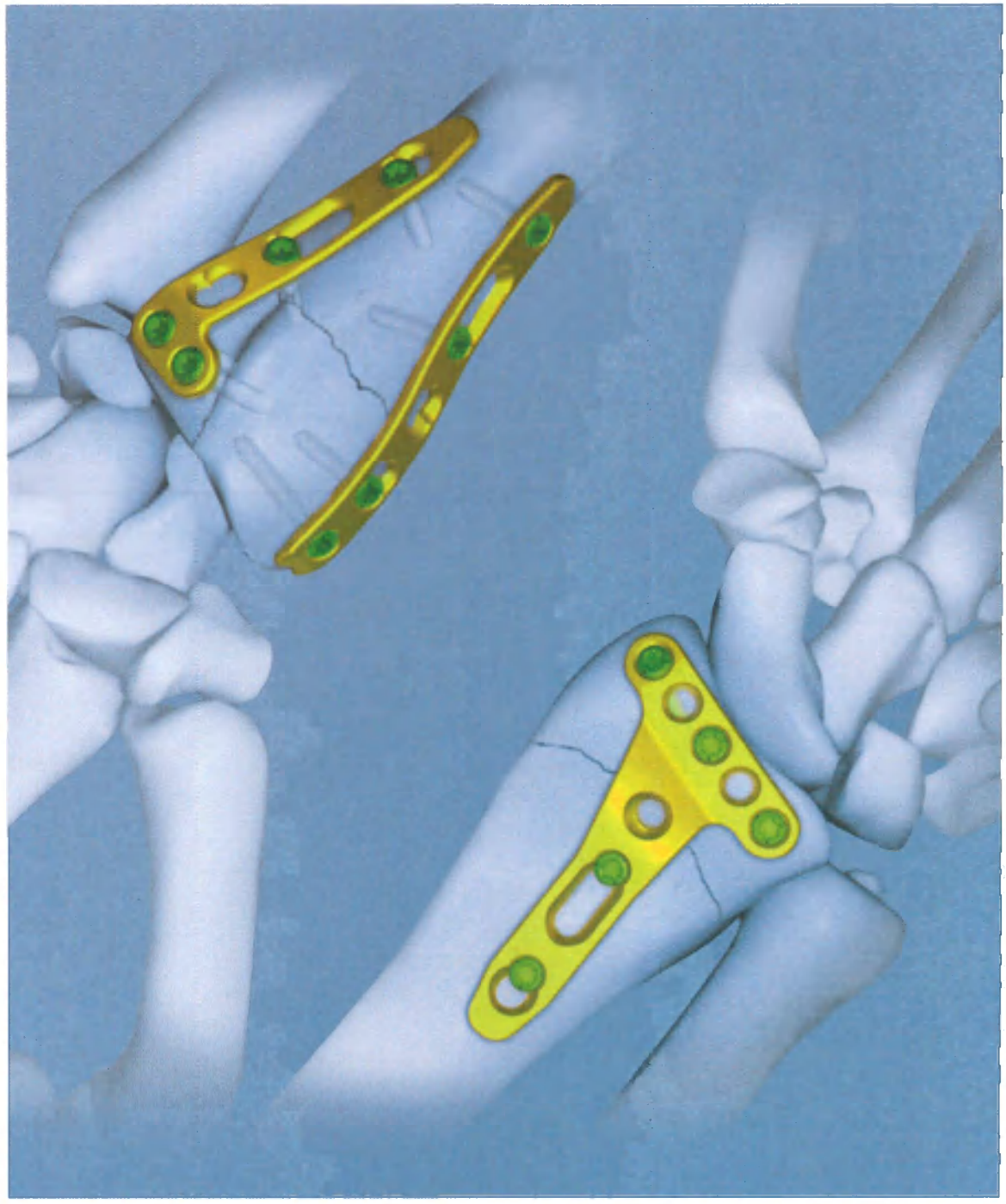
Pyrocarbon has a number of material properties which may render it more suitable than metal for hemiarthroplasty.

PYROCARBON MATERIAL PROPERTIES
Pyrocarbon has a well established safety profile, with pyrocarbon heart valves having been implanted since the 1960's. In total joint arthroplasty it demonstrates good wear characteristics. In addition, the material is well tolerated in vivo with the potential for cementless fixation through bony ongrowth.

Of more interest however, is it's performance as an articulating surface in hemiarthroplasty. The first in vivo evidence came from a dog study performed by Cook et al[1], who demonstrated a 92% probability of cartilage survival when articulating with pyrocarbon, as opposed to 20% probability when articulating against metal at eighteen months post implantation (see Fig.1). ▹

Locking Distal Radius Set.

- Angular stability with locking compression plate concept
- Pre-contoured, low profile plates



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Existing theories for why this may be so included the fact that pyrocarbon's modulus of elasticity approached that of cortical bone. In addition it was theorised that the surface may have "wetability" facilitating distribution of synovial fluid.

We have now proposed the hypothesis that the surface characteristics of pyrocarbon facilitate adsorption of surface active phospholipids.

Surface active phospholipid has already been proposed as the natural boundary layer lubricant in synovial joints[2]. It is postulated therefore that pyrocarbon forms a biomimetic joint surface through adsorption of surface active phospholipids resulting in reduction of friction. Qiu et al[3] had reported epitaxial adsorption of surfactant molecules on a graphite substrate (see Fig.4).

Whilst laboratory testing of these newly proposed properties of pyrocarbon is progressing we have implanted and followed a series of small joint hemiarthroplasties.

METHODS: Since December 2001, ten pyrocarbon hemiarthroplasties have been implanted in ten patients. Eight were implanted into the PIP joint and two into the MCP joint.

Nine procedures were undertaken for traumatic injuries and one procedure was for arthrosis associated with an enchondroma. The average time to surgery was 70 days, with a range from 11 days to 240 days. The decision to perform a hemiarthroplasty was taken when other reconstructive options were not considered possible and the patient would otherwise have been offered arthrodesis, amputation, or total joint arthroplasty.

The average age was 34.5 years, with a range from 19 years to 65 years.

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- **RESULTS:** After an average follow-up of 13 months (range 3 months to 23 months) all joints remain in-situ.

- **RANGE OF MOVEMENT:** The overall average arc of movement was 50.5° with an average extension deficit of 8° (range 0° to 20°) and an average flexion of 58.5° (range 15° to 90°).

  The PIP joint cases fared slightly better, with an average arc of 53.1° with an average extension deficit of 7.5° and an average flexion of 60.25°.

- **CLINICAL:** Nine out of ten patients reported either no pain or occasional pain on activity. Only one patient was not satisfied with the outcome of the surgery. That patient is being considered for revision to fusion of the PIP joint and interestingly sustained a significant re-injury whilst playing sport 4 months following the surgery. Documented range of movement prior to the injury was from 15° extension deficit through to 90° of flexion.

- **RADIOGRAPHIC FOLLOW-UP:** There was no radiographic evidence of loosening and one patient demonstrated evidence of joint space narrowing with erosion of the native side of the joint. This was the patient with the significant re-injury.

- **RE-OPERATIONS:** One patient has undergone tenolysis and joint release, six months post surgery. This patient has experienced a substantial improvement in range of movement. A second patient is booked for tenolysis and joint release. (This procedure has subsequently been performed after the conclusion of the current study period. At operation the prosthesis was well fixed and there was no evidence of articular cartilage erosion. The patient has responded well to the release and regained an 80° arc

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in the PIP joint. This improvement in range of movement is not included in the current analysis.)

DISCUSSION: We are continuing to evolve our knowledge of the material properties of pyrocarbon. The possible interplay between the graphitic surface of pyrocarbon and a naturally occurring surface active phospholipid (SAPL) is the subject of ongoing in vitro research.

The early clinical results of small joint hemiarthroplasty in the hand are encouraging and this technique offers a possible alternative management option, particularly when arthrodesis or amputation is being considered. Our experience has demonstrated that it is beneficial to operate early on, when it becomes apparent that the joint is not salvageable. We found that the greater the delay between injury and surgery, the greater likelihood of joint stiffness.

The best results came from making an early decision to intervene in acute unreconstructable fractures. This technique is ideally suited to younger patients and certainly offers the greater benefit for younger patients. Total joint arthroplasty may be considered in older patients, particularly where there is evidence of early pre-existing degenerative change.

In addition, we have demonstrated that when the clinical circumstances at the time of implantation make it difficult to regain range of movement following the surgery, it is possible to achieve a significant functional improvement later on through joint release. Certainly there are some clinical circumstances where this may be planned as a form of two-stage procedure. □

REFERENCES:

1.
COOK, SD; THOMAS, KA; KESTER, MA. ***Wear characteristics of the canine acetabulum against different femoral prostheses***, JBJS Vol.71-V, No.2, March 1989.

2.
HILLS, BA; MONDS, MK. ***Enzymatic identification of the load-bearing lubricant in the joint***, British Journal of Rheumatology, 1998.

3.
QIU, Y; HOLLAND, N; RUEGSEGGER, M; MARCHANT, R. ***Biomimetic engineering of non-adhesive glycocalyx-like surfaces using oligosaccharide surfactant polymers***, Nature 392: 799-801, 1998.

14 / Abstracts

- **SUNDAY** ▹ 2 SEPTEMBER 2007
- **SESSION 8** ▹ 14:05-14:20

TITLE / **COVERAGE OF SMALL DEFECTS IN THE HAND**

Author(s) / *Mark Ross*

- **DETIPPING**
- Skin loss < 1cm²
  -> Good pulp volume , nail bed
  -> No exposed bone

- **DETIPPING**
- Skin loss > 1cm²
  -> Good pulp volume , nail bed
  -> No exposed bone

- **DETIPPING**
- Skin loss > 1cm²
  -> > 50% nail bed
  -> poor pulp volume
  and / or exposed bone

- **FLAP CHOICE**
  VOLAR OBLIQUE
  HOMODIGITAL NVI

- **TRANSVERSE**
  DORSAL OBLIQUE

- **FLEXOR SURFACE**
  HOMODIGITAL
- Cross Finger
- Heterodigital

- **EXTENSOR SURFACE**
- Cross Finger
- Reverse Subdermal

- **THUMB**

- **THUMB**
- **XFF**

- **FOUCHER/KITE**
  -> Radial
  -> Most of dorsum
  -> Ulnar
  -> Terminal

- **FOUCHER**
  -> Ulnar -> Proximal Level ▹

14 /

- **FOUCHER/KITE**
  -> Terminal -> Proximal Level

- **XFF**
- Thumb Recon-Alternate Strategy

- **DORSUM OF HAND**
- Distant Pedicle
- Distant Pedicle Posterior Interosseous Artery

- **1ST WEB COMPOSITE DEFECTS**

- **THUMB**

- **DIGIT**

- **SUMMARY**
- Flap Choice
  -> Surgeon
  -> Patient

- **SUMMARY**
- What you are able to do
- What works for you

"Better a small dehiscence than a big necrosis"

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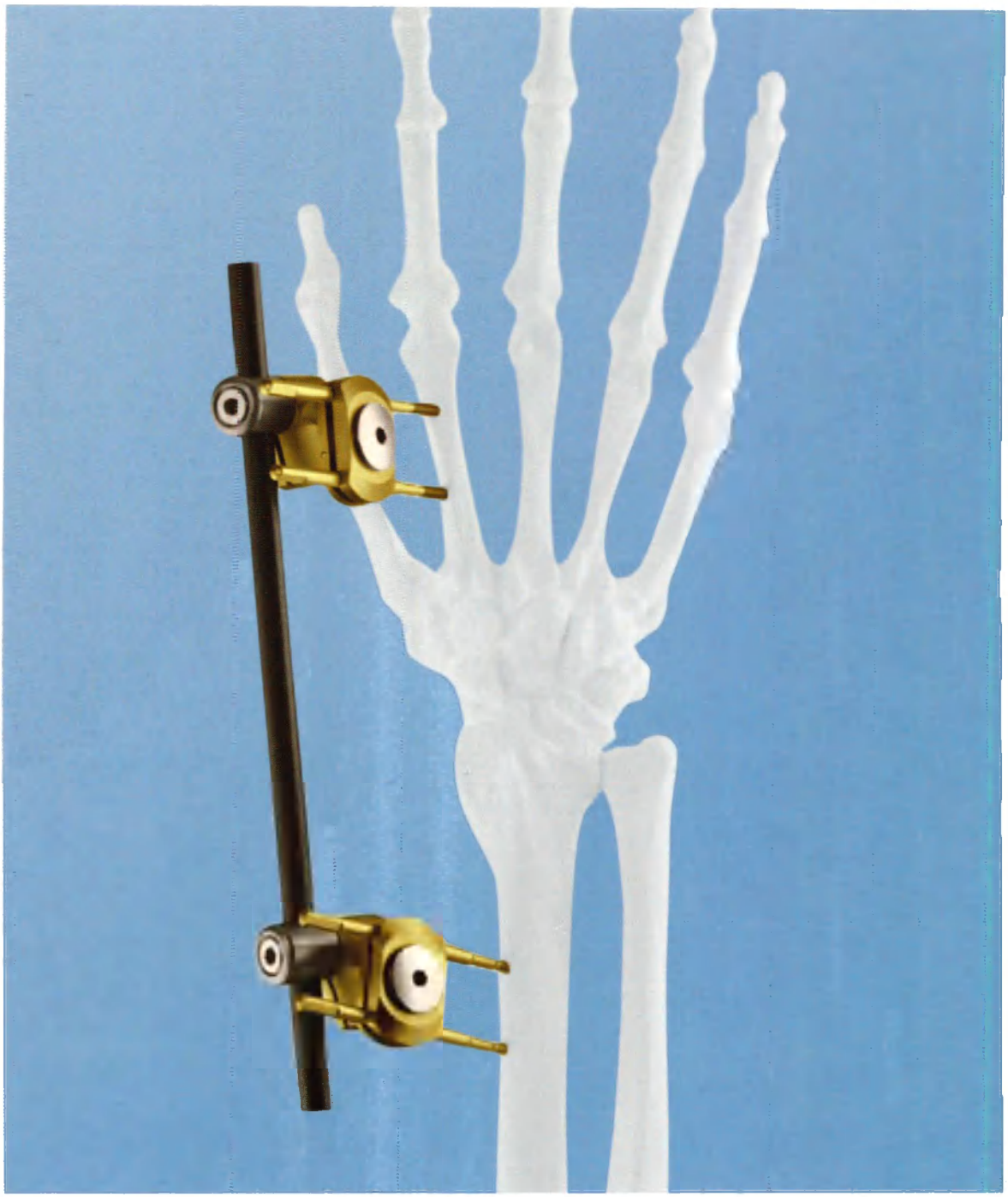
Notes

Distal Radius Fixator.

- Self-drilling schanz screws
- MRI safe clamps



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