



#### PRESIDENTS MESSAGE

Dr. Kanchan Bhattacharya

KASS is up and running. Two successful annual meetings already and gearing forward to the IASCON next year.

Should we sit back on our laurels and be happy with what we have achieved? Nothing wrong with that, but the present lot are an ambitious bunch of youngsters and they will always look to better themselves, and that's the way it should be.

What would be the next step forward? A permanent address, a scientific journal, more academic interactions and providing valuable insights to the youngsters.

4We can do all of them if we plan well. The first step towards a journal would be a newsletter. Let's work on it and see where it takes us.

KASS has done well in each of its endeavours, no reason why this should be any different.

All the best, my friends



#### VICE PRESIDENTS MESSAGE

Dr. Debashish Chatterjee

Dear all,  
It gives me immense pleasure to get back to you from the KASS platform.

Over last couple of years KASS have been a very active body with regular clinical meetings, invited lectures, live workshops, interactive sessions etc.

With so many dynamic members bubbling with new ideas and techniques and suggestions, it is only natural that we move on to the next level of academic activity - a publication of our own.

This newsletter, I think, is a small step in the right direction.

Come, join, suggest, contribute, criticise and make it count

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## Piece of Mind

Routine Health check up is often patronized by hospitals to boost revenue, by corporate to keep their employees happy, by doctors to brush away over anxious patients and by healthy patient themselves, to get over their worrisome eagerness to check that they are healthy. Sometimes it throws up funny clues and sends everyone in a wild goose chase on to the diagnosis. At other times it throws up apparently innocuous anomalies and throws the patient on to the road to anxiety and ill-being.

Here's one such story that came from a doctor himself.

### The \$50,000 Physical, Michael B. Rothberg, MD, MPH<sup>1</sup>

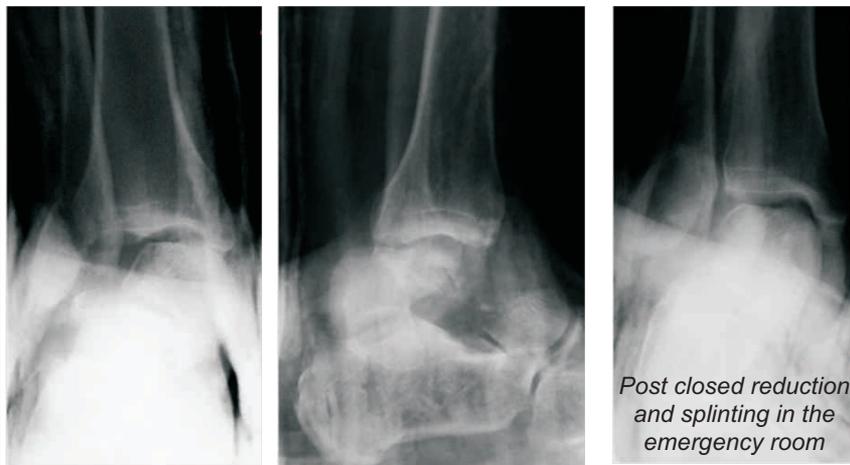
Recently, I was discussing the physical examination with some of our house staff after a conference on evidence-based medicine. I asked whether there was evidence to support performing an annual physical examination on a healthy patient. They did not know. "It couldn't hurt," one resident offered. I countered that it might, and then challenged them to come up with an example. Blank looks. Embracing the power of anecdote, I related the following story:

About ten years ago, when my father was 85 years old, he and my mother sold their house and relocated to an assisted-living facility in Pittsburgh. Shortly after their arrival, my father visited his new primary care physician for a "checkup." He had a longstanding history of hypertension,

glaucoma, and some mild mitral regurgitation, but was otherwise in good health. As part of his evaluation, the internist performed a complete and thorough physical examination. He palpated my father's abdomen and thought that the aorta was too prominent; he suspected an aortic aneurysm. My father had never smoked, and there were no recommendations for aortic aneurysm screening at the time. Nevertheless, his physician ordered an abdominal ultrasound. The test revealed a normal aorta, but the ultrasonographer noticed something suspicious in the head of the pancreas. It was recommended that he have a CT scan. The CT revealed a normal pancreas, but there was now a solitary lesion in the liver, strongly suggestive of hepatocellular carcinoma. My father, who had worked in the chemical industry his entire life, had extensive exposure to numerous solvents, including benzene, and after consulting the *Merck Manual*, he concluded that it was, in fact, liver cancer. Based on his physician's recommendation he went to visit a gastroenterologist. He was immediately admitted for a needle biopsy and follow up treatment. The biopsy proved it was not a carcinoma, but only a haemangioma, which had been there for decades. Unfortunately he almost died during the procedure, and needed 10 units of blood transfusion, 8 days of ICU stay, 2 weeks in the hospital. And 50,000 USD. What is most frustrating is that, every doctor in the process did exactly what is prescribed in text books, Now the question arises, DID HE AT ALL NEED A ROUTINE HEALTH CHECKUP?

## Case Archives

This 35 year old soccer player was tackled from the side in a championship game. He acquired an injury of the ankle and had to be stretchered off the field. He was initially seen in the emergency department, had a neurovascularly intact but deformed foot, and a closed, isolated injury to the right ankle area.



### What is your diagnosis and management ?

This patient had a Hawkins III right talar fracture-dislocation with an associated fibular fracture. Talar neck fractures happen with hyper dorsiflexion of the ankle. Additional rotational forces displaces the fragment.

#### HAWKINS CLASSIFICATION of Talar Neck Fractures

I – Undisplaced

II – With subtalar dislocation. Talar body lies locked in the mortise.

III – With subtalar and tibiotalar dislocation. Talar body lies outside the mortise, commonly medially.

IV – Type III with dislocation of the head fragment from talonavicular articulation as well.

He underwent open reduction and internal fixation using an anterolateral approach and initial open reduction through the fibular fracture site. An intraoperative picture is shown below:



It was impossible to adequately reduce the talus through this incision so an anteromedial incision was made to remove any soft tissue blocks to reduction. Our plan was to perform a medial malleolar osteotomy for access to the medial ankle joint. However, after the skin and subcutaneous tissue dissection, the deltoid ligament was completely torn. An intraoperative picture of this incision is shown below with the Howarth Elevator in the fracture site:

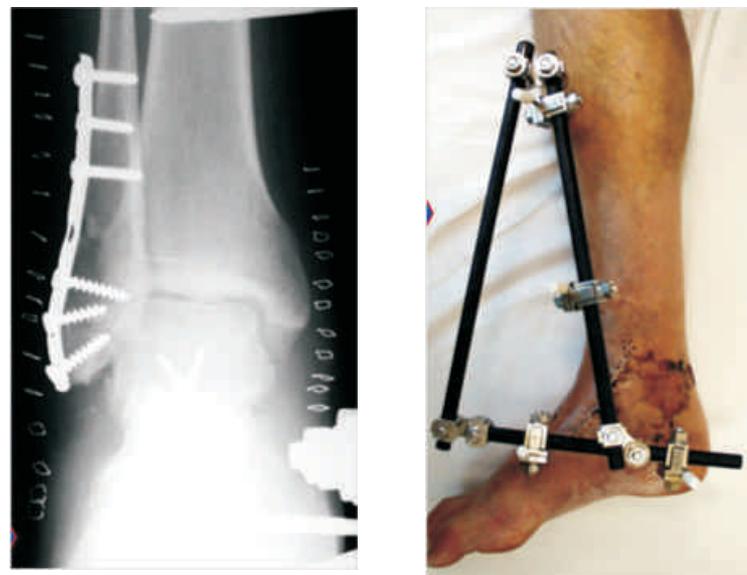
Provisional fixation was carried out using Kirschner Wires under direct visualization through both incisions. Intraoperative radiographs were obtained (shown below):



### Is this an adequate reduction ?

### What is your next step in management ?

Although the reduction was adequate, there were K-wires were in the subtalar joint. Optimally, a large fragment cancellous screw would be used for fixation over the guide wire. However, we were short on implant inventory. Therefore, we revised the K-wire fixation of the talus, applied a plate to the fibula, and an external fixator across the ankle and subtalar joints



### Lessons learnt

1. Get CT scan of all talar fractures before surgery. Comminution is more on the medial side than lateral side. Small bone fragments can lie trapped in subtalar joint and mar a good reduction.
2. Plan for dual incision. Anterolateral incision allows a better visualisation of subtalar joint and non-comminuted section of the fracture.
3. Medial malleolar osteotomy is a good technique to approach talar neck and body fractures. Avoid dorsal dissection over talar neck to minimise vascular jeopardy.
4. Check inventory for 2.4/2.7/3.5 screws and 2.0/2.4 mini fragment plates before surgery. K wires are too weak to hold reduction.
5. Use K-wires in either fragment to be used as joysticks to assist reduction. Such k wires should ALWAYS be placed parallel to the fracture. Otherwise closing near end may open up the distal end of the fracture.
6. Use compression / lag screw only on non- comminuted aspect and position screw on the comminuted aspect of the fracture. Otherwise a angular malunion at the neck of the talus develops. This often leads to a forefoot varus.
7. Screws can be introduced **post – ant** (allows screw placement perpendicular to fracture line. Portal is lateral to tendo-achilles, at the level of lateral malleolar tip, directed to the 2<sup>nd</sup> toe. Strength of fixation is best with this – if possible) OR, **anterolat – posteromed and anteromedial – posterolateral**. Ant – post screws are placed through the chondral surface of the head and countersunk.
8. Additional external fixators may be used in open injuries, soft bone with poor fixation.
9. Plate fixation is preferred when neck fractures are grossly comminuted – so as to maintain length. 4/5 hole , 2.0/2.4 miniplates bent at 70degree are used in the lateral talar neck. Check that this should not impinge on the fibular facet of the talus.

# Meniscus tear: A current concept review

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## {Abstract}:

Menisci are two semilunar shaped fibrocartilagenous structure between femoral condyle and tibial plateau. They have important role in knee function. Long term follow up studies shows virtually all meniscectomized knees develop arthritis with time. Meniscus has function of load bearing, load transfer, stress absorption, joint stability, joint lubrication and joint congruity. Because of all these function meniscal tissue should be preserved whenever possible. Meniscus repair has evolved from open to arthroscopy surgeries. Recently meniscal replacement and tissue engineering are used to deal with considerable meniscus injuries

## Introduction:

Meniscal injuries represent the most common intra articular knee injuries and are the frequent cause of surgical procedure performed by orthopaedic surgeon. The changes in pivoting sports activities in past few years have resulted in increased injury rates of the meniscus. Meniscus integrity is the key for joint health of the knee. Once thought to be vestigial remnant of leg muscle, the meniscus is now recognised for its function of tibiofemoral load transmission, shock absorption, and lubrication. Untreated meniscus tear causes intermittent pain, joint swelling, recurrent mechanical symptom, reduction in quality of life. As a result meniscal preservation has become the goal of therapy of meniscal injuries.

## Anatomy:

Menisci are two semilunar wedges in the knee joint between femoral condyle and tibial plateau. Most of the tissue are avascular therefore cannot repair itself if the tear is in avascular portion of the meniscus. At birth whole meniscus is vascularized. Arnoczky and Warren demonstrated important vascular anatomy of the meniscus. Blood supply originates from medial and lateral inferior and superior geniculate arteries, giving rise to perimeniscus capillary plexus within capsule and synovium, which supply meniscus periphery. Meniscus comprised of circumferentially oriented collagen fibres provide resistance to hoop stress and radially oriented fibres which resist shear stress. A <1cm stable tear limited to outer 20% of meniscus could heal itself with brief period of immobilisation. 50% of compressive load in the knee is transferred by menisci in extension while 85% at 90 degree of flexion.

## Epidemiology:

Meniscal injuries are the most common injury of the knee. Sports injuries account for 33% of tears. There is 4:1 male to female ratio with 2/3<sup>rd</sup> cases of medial meniscus. Associated ACL tear in 47% of sports injuries and 13% non-sporting injuries.

## Diagnosis:

A well trained surgeon can safely rely on clinical examinations for diagnosing meniscal injuries. History and clinical examinations are at least as accurate as MRI in skilled orthopaedic surgeon hand. Sensitivity and specificity of MRI are 93% and 88% respectively for medial meniscal tear and 79% and 95% respectively for lateral meniscal tears. But arthroscopy is infallible in the diagnosis of meniscal injuries.

One or other form of history of injury is present in majority of patients. Pain of knee is common form of presentation.

## Classification:

Tear patterns include vertical tears (longitudinal and radial), oblique, complex (degenerative), and horizontal. Oblique and vertical longitudinal tears represent 81% of meniscus tears.

## Risk factor for osteoarthritis:

- Meniscus extrusion
- Complex tear
- Long duration of clinical symptom
- Total meniscectomy
- Lateral meniscectomy
- Meniscus tear with ACL tear
- Elevated arthritis related marker

## Management:

Main goal of every meniscus treatment should be maintenance of maximum tissue as possible.

Treatment option ranges from conservative to operative, partial to total meniscectomy, meniscus repairs with different methods and implants, meniscus transplant and tissue engineering.

Tears within 3mm of meniscosynovial junction usually allow healing without surgical intervention. Tear 5mm from this junction needs surgery, anything between 3-5mm need clinical judgement. **Andersson-Molina** showed linear relation between amount of tissue removed in meniscectomy and stress in joint, also showed inversely related function of knee and amount of tissue removed. Recent studies have demonstrated that meniscus repair can be successfully achieved with tears in less vascular zone, more complex geometric configurations and isolated tears in younger patients. During last decade the approach to meniscal repair has significantly evolved and continues to expand, this is mainly because of the recent advances to greater understanding of anatomy, biomechanical function, cartilage haemostasis and proprioception.

## Accepted indications for repair include

- 1) Tear located in the periphery 10% to 30% of the meniscus
- 2) Tear within 3mm-4mm of the meniscocapsular junction
- 3) Complete vertical longitudinal tear >10mm long
- 4) Tear that can be displaced by probing
- 5) Tear absent of deformity or secondary degeneration
- 6) Tear in active patient
- 7) Tear associated with concurrent ligament stabilization or in a stable knee.

Retrospective studies have reported 73% to 91% success rates for repair surgery.

Meniscal devices offer several advantages for repair of all kind of tears; however these repair devices have disadvantages of increased cost, retained polymer fragments, implant migration, foreign body reaction, inflammations, significant learning curve, chondral injury, and concerns over lower successful healing rates.

## Summary:

There is variable success rates in all meniscal surgical techniques, especially tears located in the inner two third of the meniscus, tissue engineering is thought to be future answer to this entire problem. In recent years study is directed towards the field of tissue engineering. It may offer treatment modalities for the regeneration of meniscus lesion or the complete replacement of meniscus by production of newly synthesizing meniscal tissue in a part or whole. Tissue engineering is based on a smart and unique combination of exogenous cells, matrix scaffold, and specific stimuli, in an in vitro or in vivo environment. Molecular biology, polymer science, gene therapy and bioactive proteins that augment repair mechanism are the prospects on which the future depends to provide improved biological solutions for meniscus tear.



## MINDBENDERS

### 1. Ligamentum flavum means ligament of what colour?

- A) Blue    B) Red    C) Purple    D) Yellow

*D. The ligamenta flava are a series of ligaments of yellow elastic tissue that connect the laminae of adjacent vertebrae from the axis to the sacrum.*

### 2. Aviator's astralgus describes a fracture often suffered by pilots in the early 20th century. What is the more current name for this injury?

- A) Fracture of the 5th lumbar vertebra.  
B) Fracture of the anterior-inferior iliac wing  
C) Fracture of the talus  
D) Fracture of the olecranon  
E) Fracture of the metatarsals

*C. Astralgus was an early name for the talus, and the fracture "aviator's astralgus" described was caused by the impact of the rudder bar, which was controlled by the pilot's foot.*

### 3. Dupuytren contracture is most common in people of what ancestry?

- A) Native American    B) Spanish    C) Viking    D) Japanese

*C. Although the cause of Dupuytren contracture is not well-defined, it is known to run in families: 60% to 70% of individuals with Dupuytren contracture have a family history of the condition. It is most common in older (> 40 years) men (approximately 10:1 male:female) with Northern European ancestry (e.g., those with a Viking ancestry).*

### 4. Who first described Legg-Calvé-Perthes disease?

- A) Arthur Legg    B) Jacques Calvé    C) Georg Perthes  
D) Waldenström    E) Karel Maydl

*E. Maydl described the condition in 1897, followed by Waldenström in 1909, and then Legg, Calvé, and Perthes in 1910.*

### 5. Where would you look for the Hawkins sign to determine the possibility of osteonecrosis?

- A) Hip    B) Knee    C) Ankle    D) Wrist    E) Elbow

*C. The Hawkins sign is a subchondral radiolucent band in the dome of the talus. The absence of the Hawkins sign indicates a lack of revascularization of the talar after fracture of the talus.*

### 6. Orthopaedists love their acronyms! How many of the following can you define?

- A) PASTA    B) PLIF    C) DISI    D) SLAP    E) STIR sequence

*A. Partial articular supraspinatus tendon avulsion  
B. Posterior lumbar interbody fusion  
C. Dorsal intercalated segment instability  
D. Superior labral tear from anterior to posterior*

### 7. Radiographs (X-rays) dramatically changed the practice of orthopaedic surgery. What year did Wilhem Röntgen produce the first X-rays?

- A) 1875    B) 1885    C) 1895    D) 1905    E) 1915

*C. Röntgen produced the first X-rays in 1895.*

### 8. In 1974, the New York Times reported in its Patents of the Week a new diagnostic method called "nuclear magnetic resonance." What disease or condition was this new method purported to identify?

- A) Osteoporosis    B) Cancer    C) Heart disease  
D) Diabetes    E) Infertility

*B. According to the patent holder, Dr. Raymond V. Damadian, a physician and biophysicist at Downstate Medical Center in Brooklyn, the method could distinguish normal from cancerous tissue. He later retracted his 1977 contention that the technique had been used to discover cancer in a living patient. In the early 1980s when the technology became popular, its name was changed to "magnetic resonance imaging" because some patients were frightened by the suggestion of nuclear radiation.*

## UPCOMING EVENTS

### TRAUMA UPDATE 2015

9th – 10th October, 2015, HYATT REGENCY, Kolkata,  
**First national conference of AOTS**  
(Association of Orthopedic Trauma Surgeons)

**Org.Sec.- Prof. Dr GG Kar,**  
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THEME – Lower Limb Trauma  
HYPERFOCUS – Knee injuries  
In association with **WBOA** (West Bengal Orthopedic Association)  
Supported by **KASS** (Kolkata Arthroscopy and Sports Surgery)

### KASS TALKS – SEASON-II

Master class series with eminent teachers and experts in the field of Arthroscopy and sports surgery.

**Starting November 2015,**

NRS Medical College ( Convenor Dr Sanjay Kumar)  
RGKar Medical College ( Convenor Dr Sunit Hazra)  
Calcutta Medical college ( Convenor Dr Rajeev Raman)  
Apollo Gleneagles Hospital ( Convenor Dr Abheek Kar)

### KASS CADAVERIC LABS

Biannual hands on cadaveric course in  
knee arthroscopy and shoulder arthroscopy  
Convenor - Dr Swarnendu Samanta  
swarnendu65@gmail.com  
Phone - 9830083031

### IAS CONNECT, KOLKATA

**December 2015**

Out reach Program of Indian Arthroscopy Society  
Including live surgery and discussion on  
essentials and controversies in Arthroscopy  
Convenor - Dr Swarnendu Samanta

### KASS WEBINAR

All India Webinar on Sports Surgery

**January 2016**

In association with Janssen Pharma  
Convenor - Dr. Rajeev Raman

### IASCON 2016, KOLKATA

**29<sup>TH</sup> Sept – 2<sup>ND</sup> October, 2016, HYATT REGENCY, Kolkata**  
15<sup>th</sup> Annual conference of Indian Arthroscopy Society

#### PROGRAM HIGHLIGHTS

6 Preconference Workshops / 20 Live Surgeries  
15 Panel Discussions / 9 Debates  
Free Papers / Poster sessions / Young Surgeons Forum  
Awards and Fellowships / Ganges By the evening

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