



Diploma of the Hellenic Spine Society

(equivalent to the Eurospine Diploma)

MODULE 3 : SPINAL DEFORMITIES
MODULE 5 : TUMOURS AND INFLAMMATORY DISEASES OF THE SPINE

12 - 13 NOVEMBER 2018
CENTRE FOR DISSEMINATION OF RESEARCH
RESULTS OF ARISTOTLE UNIVERSITY OF THESSALONIKI
(K.E.D.E.A) A.U.TH.
Thessaloniki, Greece

Course Manager
Ioannis Magras
Associate Professor of Neurosurgery

www.dhss.gr

SCIENTIFIC PROGRAMME

Module 3: Spinal Deformities/

Monday, 12 November 2018

COURSE ATTENDANCE IS MANDATORY

Chairman: Apostolou Thomas

08:30 – 09:00 **Course registration & Welcome Coffee**

09:00 – 10:30 / Session 1: Principles of spinal deformity

09:00 – 09:15 **Scoliosis: Aetiology & Prognostic factors**
N. Valanos

09:15 – 09:30 **Kyphosis**
I. Gelalis

09:30 – 09:45 **Clinical Assessment**
A. Kapinas

09:45 – 10:00 **Imaging of Deformities**
K. Kouskouras

10:00 – 10:30 **Case Discussion**

10:30 – 11:00 **Coffee Break**

11:00 – 11:15 / Session 2: Conservative treatment

11:00 – 11:15 **Casting, Bracing & Role of Rehabilitation**
N. Valanos

11:15 – 13:15 / Session 3: Principles of Surgical treatment

11:15 – 11:30	Pre-Operative Assessment: how to prepare for a complex case K. Paterakis
11:30 – 11:45	Positioning the Patient S. Papadopoulos
11:45 – 12:00	Blood Saving S. Polyzoidis
12:00 – 12:15	Intra-Op Monitoring A.Karagiannidis
12:15 – 12:30	Pedicle Screw Guidance in Deformity A.Spiliotopoulos
12:30 – 12:45	Bone Fusion S. Polyzoidis
12:45 – 13:15	Case Discussion
13:15 – 13:45	Lunch Break

13:45 – 15:30/ Session 4: Principles of Surgical treatment

13:45 – 14:00	Congenital Spinal Cord Anomalies A.Ploumis
14:00 – 14:15	Congenital Spinal Deformities N. Laliotis
14:15 – 14:30	Neuromuscular Scoliosis N. Laliotis



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14:30 – 14:45 **Idiopathic Adult Deformities**
A.Spiliotopoulos

14:45 – 15:00 **Degenerative Deformities**
K. Paterakis

15:00 – 15:30 **Case Discussion**

15:30 – 16:00 **Coffee Break**

16:00 – 17:30 / Session 5: Technique and strategy

16:00 – 16:15 **End Limits of Fusion in Idiopathic Scoliosis**
E. Samoladas

16:15 – 16:30 **Coronal & Sagittal Balance**
A.Ploumis

16:30 – 16:45 **Technique & Strategy: posterior approach**
A.Kapinas

16:45 – 17:00 **Technique & Strategy: anterior approach**
E. Samoladas

17:00 – 17:30 **Discussion: Posterior/ Anterior**

17:30 – 18:15 / Session 6: Osteotomies

17:30 – 17:45 **Role & Technique of Spinal Osteotomies**
Th. Apostolou

17:45 – 18:15 **Case Discussion: Adult & Degenerative**
Th. Apostolou

LEARNING OUTCOMES: SESSION 1 - PRINCIPLES OF SPINAL DEFORMITY

Scoliosis: Aetiology & Prognostic Factors

- Describe the aetiology and prognostic factors associated with
 - idiopathic scoliosis
 - infantile idiopathic scoliosis
 - secondary scoliosis

Kyphosis

- Differentiate between the aetiology and prognostic factors associated with regular and angular kyphosis
- Evaluate management options for
 - kyphosis
 - kyphus

Clinical Assessment

- Differentiate between functional and structural deformities
- Take a structured approach to clinical evaluation
- Assess skeletal maturity
- Identify prognostic factors of progression
- Identify rotational deformity
- Perform a neurological assessment
- Explain treatment strategy to patients and their families

Imaging of Deformities

- Define the role of standard coronal and sagittal x-ray to evaluate deformity
- Define the role of bending and traction x-rays
- Differentiate between imaging in children and adults
- Minimise radiation dose to patients
- Recognise red flags, including tumours, neural tube abnormalities, connective tissue and muscular disease and their association with spinal deformity

LEARNING OUTCOMES: SESSION 2 - CONSERVATIVE TREATMENT

Casting, Bracing & Role of Rehabilitation

- Justify the role of casting today
- Explain the pros and cons of different types of brace treatment
- Formulate principles of rehabilitation for patients with spine deformity
- Define the role of halo traction as definitive or interim treatment

LEARNING OUTCOMES: SESSION 3 - PRINCIPLES OF SURGICAL TREATMENT

Pre-Operative Assessment: how to prepare for a complex case

- Formulate a surgical plan
- Record a comprehensive preoperative assessment
- Consider special issues including pulmonary, cardiac, hematological, nutritional and metabolic

Positioning the Patient

- Position patients safely
- Explain the rationale to other team members
- Compare the purpose of prone, lateral and supine positions

Blood Saving

- Anticipate the factors affecting blood loss
- Recognize trigger points for transfusion
- Minimise the risks of homologous transfusion
- Outline the role of erythropoietin
- Compare the pros and cons of autologous transfusion, haemodilution, hypotensive anaesthesia, anti-fibrinolytic agents, intraoperative blood salvage

Intra-Op Monitoring

- Select appropriate types of monitoring
- Differentiate between SEP and MEP
- Perform a safe and reliable wake up test
- Recognise when a wake up test is required
- Respond appropriately when monitoring indicates intervention required
- Triggered EMG pedicle screw stimulation.

Pedicle Screw Guidance in Deformity

- Assess appropriate placement
- Minimise the risk of misplacement
- Balance the pros and cons of spinal navigation
- Assess the advantages and disadvantages of freehand probing

Bone Fusion

- Identify factors influencing spinal fusions
- Define the roles of osteoconduction and osteoinduction factors
- Explain the physiology of bone grafting
- Outline the risk factors associated with non-union
- Categorise bone fusion and diagnose non union



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LEARNING OUTCOMES: SESSION 4 - PRINCIPLES OF SURGICAL TREATMENT

Congenital Spinal Cord Anomalies

- Differentiate between types of congenital spine deformity
- Link prognostic factors with appropriate type and timing of intervention
- Evaluate non operative, early and late operative treatment options

Congenital Spinal Deformities

- Relate the stages of development to deformities of the spinal cord
- Select appropriate investigations
- Evaluate treatment options

Neuromuscular Scoliosis

- Describe the aetiology and prognostic factors associated with neuromuscular scoliosis
- Identify factors indicating progression or risk to neurological structures
- Evaluate management options
- Assess associated pulmonary and cardiac problems

Idiopathic Adult Deformities

- Identify common problems associated with adult deformity
- Outline the progress of scoliosis through life
- Relate appropriate monitoring strategies
- Evaluate operative and non operative options for different age groups
- Relate changes to sagittal /coronal imbalance

Degenerative Deformities

- Use spino-pelvic parameters to assess degenerative deformities
- Differentiate between idiopathic and degenerative (de novo) deformity
- Perform clinical evaluation of sagittal balance and stenosis
- Select appropriate investigations
- Evaluate operative and non operative options
- Consider comorbidities associated with age
- Assess patient expectation

LEARNING OUTCOMES: SESSION 5 - TECHNIQUES & STRATEGY

End Limits of Fusion in Idiopathic Scoliosis

- Use classification to determine the end limits of fusion (Lenke)
- Define the lower and upper limit of instrumentation

Coronal & Sagittal Balance

- Plan preoperative spine assessment of coronal and sagittal balance
- Explain primary factors and compensatory mechanisms
- Evaluate surgical options
- Formulate an appropriate preoperative and surgical plan

Technique & Strategy: posterior approach

- Formulate principles of surgical correction
- Evaluate strategic surgical options
- Recognise indications for a posterior or combined approach

Technique & Strategy: anterior approach

- Differentiate between anterior release, anterior fusion and anterior instrumentation
- Select appropriate approach for procedure
- Recognise indications for
 - anterior approach
 - anterior instrumentation

LEARNING OUTCOMES: SESSION 6 - OSTEOTOMIES

Role & Technique of Spinal Osteotomies

- Justify the aim of osteotomy
- Differentiate between the different types of osteotomy
- Relate to appropriate degree of correction
- Select appropriate level



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SCIENTIFIC PROGRAMME

Module 5: Tumors (including intramedullary and intradural extra medullary tumors) & Inflammatory Disease of the Spine /

Tuesday, 13 November 2018

COURSE ATTENDANCE IS MANDATORY

Chairman: Voulgaris Spyros

08:30 – 09:00 **Course registration & Welcome Coffee**

09:00 – 10:30 / Session 1: Vertebral Osteomyelitis

09:00 – 09:15 **Etiology, Pathogenesis, Routes of Spread**
E. Samoladas

09:15 – 09:30 **Symptoms & Diagnosis**
E. Samoladas

09:30 – 09:45 **Conservative Treatmnt & Indications for Surgical Treatment**
P. Tsitsopoulos

09:45 – 10:00 **Surgical Management of Spinal Infections**
A.Spiliotopoulos

10:00 – 10:30 **Case Discussion**

10:30 – 11:00 **Coffee Break**

11:00 – 12:45 / Session 2: Rheumatoid Disease

11:30 – 11:45 **Etiology, Pathogenesis, Symptoms, Diagnosis**
Th. Dimitroulas

- 11:45 – 12:00 Stabilizing & Corrective Surgery of the TL Spine (Especially Ankylosing Spondylitis)**
K. Paterakis
- 12:00 – 12:15 Diagnosis & Treatment of the Occipito - Atlantoaxial Complex**
D. Bouramas
- 12:15 – 12:45 Case Discussion**
- 12:45 – 13:15 Lunch Break**

13:15 – 14:30 / Session 3: Metabolic Bone diseases

- 13:15 – 13:30 Bone Disorders**
K. Kotsa
- 13:30 – 13:45 Osteoporosis (Etiology, Diagnosis, Drug Therapy)**
K. Kotsa
- 13:45 – 14:00 Surgical Considerations in Disorders of the Bone**
S. Polyzoidis
- 14:00 – 14:30 Case Discussion**

14:30 – 15:45 / Session 4: Tumours of the Axial Skeleton

- 14:30 – 14:45 Benign Tumours and Tumour Like Lesions: diagnosis and management**
Th. Apostolou
- 14:45 – 15:00 Primary Malignant Tumours: diagnosis and management**
V. Lykomitros
- 15:00 – 15:15 Secondary Malignant Tumours: diagnosis and management**
P. Toullos



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15:15 – 15:45 Case Discussion

15:45 – 16:15 Coffee Break

16:15 – 17:15 / Session 5: Tumors of the spinal cord

16:15 – 16:30 Intradural extra medullary Tumours
S. Voulgaris

16:30 – 16:45 Intramedullary Tumours
I.Patsalas

16:45 – 17:15 Case Discussion

LEARNING OUTCOMES: SESSION 1 - VERTEBRAL OSTEOMYELITIS

Etiology, Pathogenesis, Routes of Spread

- Explain the aetiology of vertebral osteomyelitis including: bacterial, tuberculous, and fungal
- Describe the pathogenesis including venous route, arterial inoculation and iatrogenic direct extension
- Anticipate the routes of spread: vertebral body & intervertebral disc

Symptoms & Diagnosis

- Recognise the signs and symptoms of vertebral osteomyelitis
- Identify the risk factors (immunodeficiency etc)
- Select appropriate investigations
- Distinguish on MRI and x-ray the key features that define and contrast both pyogenic and tuberculous spinal lesions

Conservative Management & Indications for Surgical Treatment

- Evaluate options for conservative treatment
- Compare absolute and relative indications for conservative treatment

Surgical Management of Spinal Infections

- Formulate a plan for infection specific treatment
- Anticipate complications
- Plan appropriate management
- Appraise current evidence concerned with spondylitis outcome and prognosis

Case Discussion

LEARNING OUTCOMES: SESSION 2 - RHEUMATOID DISEASE

Etiology, Pathogenesis, Symptoms, Diagnosis

- Explain the aetiology of rheumatoid disease
- Describe the pathogenesis relating rheumatoid disease and joint changes
- Recognise the signs and symptoms
- Select and interpret appropriate investigations and imaging
- Recognise signs of
 - the rheumatoid spine
 - ankylosing spondylitis

Stabilizing & Corrective Surgery of the Spine

- Describe indications for corrective surgery for ankylosing spondylitis
- Diagnose occipito-atlantoaxial complex and subaxial cervical spine
- Differentiate between horizontal and vertical atlantoaxial instability

Diagnosis & Treatment of the Occipito-Atlantoaxial Complex

- Identify the commonly used radiographic lines and measurements for the C0 to C2

complex.

- Plan appropriate treatment for C0 to C2 and sub-axial rheumatic neck problems.
- Appraise current evidence regarding outcome and prognosis

Case Discussion

LEARNING OUTCOMES: SESSION 3 - METABOLIC BONE DISEASES

Bone Disorders

- Paget's disease
- Rickets
- DISH (Forestier's disease)
- Metabolic bone disease

Osteoporosis

- Outline the etiology of osteoporosis
- Diagnose osteoporosis using appropriate investigations

Surgical Considerations In Disorders of the Bone

- Evaluate treatment options
- Compare minimally invasive techniques including;
 - vertebroplasty,
 - kyphoplasty
 - vertebral body stenting

Case Discussion

LEARNING OUTCOMES: SESSION 4 - TUMOURS OF THE AXIAL SKELETON

Primary benign tumours and tumour like lesions; diagnosis and management

- Explain the aetiology of tumours and tumour like lesions
- Describe the pathogenesis relating to tumours and tumour like lesions
- Differentiate between primary benign tumours and tumour like lesions
- Select appropriate investigations, interpret results and stage tumour like lesions
- Evaluate treatment options
- Anticipate outcomes
- Formulate a plan for long term monitoring

Secondary malignant tumours; diagnosis and management

- Justify the relative importance of combined tumour therapy including surgery, radiotherapy and chemotherapy.
- Evaluate surgical options and results
- Formulate a multidisciplinary management plan
- Justify the risks, benefits and impact of radiotherapy and chemotherapy.
- Evaluate surgical options
- Anticipate complications

Case Discussion