

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



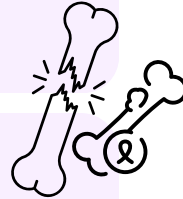
MID | Lectures (1-3)

وَإِن تَتَوَلَّوْا يَسْتَبَدِلْ قَوْمًا غَيْرَكُمْ ثُمَّ لَا يَكُونُوا أَمْثَلَكُمْ

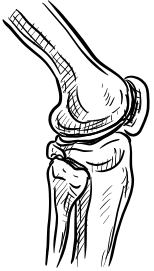
اللهم استعملنا ولا تستبدلنا

Past papers

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PATHOLOGY



The background features three vertical bars on the left side: a wide purple bar, a medium blue bar, and a narrow light blue bar. The right side of the slide is white with a pattern of small, semi-transparent red dots arranged in a grid that tapers off towards the right edge.

Past papers

Always remember that past exam questions are only for practice.

Bismillah, let's go!

A 60-year-old female patient came to the clinic and was physically diagnosed with bone weakness. An X-ray was done, and it was noticed that she has compression fractures in her vertebrae. Which of the following tests should be done?

- A) Blood test looking for certain enzymes
- B) Taking a biopsy
- C) MRI
- D) DEXA

A 71-year-old woman presents with sudden severe low back pain. Physical examination revealed severe kyphosis, while an X-ray of her back revealed a compression fracture of a vertebra marked thinning of her bones. Serum calcium, phosphorous, and alkaline phosphatase levels are all within normal range. Identify the best statement that describes this disease:

- A) Bone densitometry (DEXA scan) is needed to confirm the diagnosis
- B) Secondary forms are the most common form of this disease
- C) Bone biopsy is indicated to confirm the diagnosis
- D) Uncommon disorder due to enhanced osteoblastic activity
- E) Decreased osteoclast activity is a major etiology

You evaluated a 3-year-old child who came with a history of multiple recurrent bone fractures and hearing difficulty. Examination showed triangular face, broad forehead, and blue sclera, This disease is characterized by:

- A) Deficiency of type I collagen synthesis (autosomal dominant)
- B) Fibroblast growth factor receptor abnormalities
- C) Impaired endochondral and intramembranous ossification
- D) Impaired osteoclast activity
- E) “Marble bone” on X-ray

A patient is present with impaired hearing and blue sclera. Which of the following is right regarding his disease:

- A) Bone denser than usual is another symptom
- B) It is caused by a defective synthesis of collagen type III
- C) Some forms of this disease do not affect normal life span
- D) It is the most common X-linked disease

Most common causes of morbidity and mortality from osteopetrosis are:

- A) Immunologic reactions
- B) Respiratory insufficiency
- C) Leukopenia
- D) Bone fractures and their complications

What is the function of OPG (osteoprotegerin):

- A) Blocks NFkB receptor
- B) Blocks M-CSF receptor
- C) Blocks RANK-L, stimulating osteoclast differentiation
- D) Blocks RANK-L, inhibiting osteoclast differentiation

Which of the following is true regarding lamellar bone:

- A) It is found in the fetus
- B) Fibers are disorganized
- C) Has stronger structural integrity than woven bone
- D) Its formation is rapid

Supernumerary digit is caused by:

- A) Abnormal fusion between two bones
- B) Abnormalities in homeobox genes, cytokines, and their receptors
- C) Abnormal formation of sutures
- D) A single specific gene mutation

Which of the following is true about osteocytes:

- A) They are large and multinucleated
- B) They have high metabolic activity
- C) They are mature bone cells
- D) They are essential for bone resorption

Which of the following is FALSE regarding bone:

- A) Lamellar bone is the mature bone
- B) Formation of woven bone is much faster than lamellar bone
- C) Both types have similar composition in general
- D) The presence of woven bone in adults is normal

Osteogenesis imperfecta can be best described as:

- A) X-linked mutation in collagen I synthesis
- B) Autosomal dominant mutation in collagen I synthesis
- C) Mutation in collagen III synthesis
- D) None of the above

Which one of the following statements best describe bone structure and its histophysiology:

- A) The osteoid constitutes 85% of the matrix
- B) Type II collagen is the main protein in the matrix
- C) Lamellar bone is less cellular than woven bone
- D) Osteocytes are large multinucleated cells
- E) Osteoclasts are small bone-forming cells

The most common cause of inherited disorders of connective tissue is:

- A) Achondroplasia
- B) Thanataophoric dysplasia
- C) Osteogenesis imperfecta
- D) Osteopetrosis
- E) Bone dysostosis

In contrast to lamellar bone, woven bone is characterized by being:

- A) More seen in elderly people than younger groups
- B) Seen after complete healing of fractures
- C) More cellular and less linear/parallel than lamellar
- D) Harder in consistency than lamellar
- E) Stronger than lamellar

Congenital dysplasia of bone is characterized by:

- A) Dysostosis such as syndactyly
- B) Disorganized bone and cartilage due to gene mutation
- C) Abnormal condensation and migration of bone mesenchyme
- D) Disorders of homeobox genes
- E) Involves cytokines abnormalities such as bone aplasia

A 2-year-old boy is treated for recurrent fractures of his long bones. Physical examination reveals blue sclerae, loose joints, abnormal teeth, and poor hearing. Molecular diagnostic studies will most likely demonstrate a mutation in the gene encoding which of the following proteins:

- A) Collagen
- B) Dystrophin
- C) Lysyl hydroxylase
- D) Fibrillin
- E) Fibroblast growth factor receptor

A 30-year-old man with dwarfism is admitted to the hospital for hip replacement due to severe osteoarthritis. He has short arms and legs and a relatively large head. His parents do not show signs of this congenital disease. This patient most likely has a spontaneous mutation in the gene encoding which of the following proteins:

- A) Collagen type I
- B) Collagen type II
- C) Fibroblast growth factor receptor
- D) Growth hormone receptor
- E) Insulin-like growth factor

A 55-year-old man presents with pain in the left arm. Laboratory studies show elevated serum levels of calcium and parathyroid hormone. An X-ray of the left arm reveals multiple small bone cysts and pathologic fractures. Biopsy of the affected bone discloses numerous giant cells in a cellular and fibrous stroma. The patient undergoes removal of a parathyroid adenoma. Which of the following best describes the pathogenesis of bone pain and pathologic fractures in this patient:

- A) Enhanced osteoblast activity
- B) Impaired mineralization of osteoid
- C) Increased bone resorption
- D) Increased mineralization of bone
- E) Osteoporosis

A patient with many fractures, no severe traumas, he has loose joints, abnormal teeth, his X-ray showed thinned bones, one of the following is another feature for this disease:

Ans: hearing loss and blue sclera

A woman has suffered from fractures in her vertebra with necrotising features. This disease is :

Ans: Rare but easy to treat

A child came to the emergency room with problems with his hearing and bone weakness . You should:

Ans: test his sclera

An athlete has been taking steroids for a long time complains of pain in his proximal femur, he denies any recent trauma . After examination you decide to take a biopsy, you will see:

Ans: triangular necrotic yellow tissue

The question had a long story about Dr. Yasser that had short stature , short limbs with a relatively bigger head . The point was to ask what the most common form of dwarfism is :

Ans: achondroplasia

A 71 year-old woman came with vertebral compression fractures after performing an x-ray image it chose many lytic lesions with thinned bone trabeculae . one of the following is most true :

- A) Estrogen low levels is the main etiology
- B) Preventive procedures is the best thing to do to avoid this case
- C) Uncommon disorders due to enhanced osteoblastic activity
- D) Decreased osteoclast activity is a major etiology

A craniotabes indicates which of the following conditions :

- A) Rickets
- B) Paget's disease
- C) Osteogenesis imperfecta
- D) Hyperparathyroidism

If you didn't know it, just memorize it and skip it easily (:

Ans: A

Which of the following organs will be affected the least by osteogenesis imperfecta :

- A) Sclera
- B) Skin
- C) Bone
- D) Teeth
- E) Heart

The most common cause of dwarfism is:

- A) Thanatophoric dysplasia
- B) Dysostosis
- C) Achondroplasia
- D) Osteopetrosis

اللهم صلّ على محمد وعلى آل محمد كما صلّيت
على إبراهيم وعلى آل إبراهيم إنك حميد مجيد

Ans: C

Which one of the following statements best describes avascular necrosis of femoral head:

- A) Can be seen as a complication of chronic steroid therapy
- B) Congenital factors are the mainstay of its pathogenesis
- C) Familial disorders are responsible for more than 80% of the cases
- D) Radiation is the most common predisposing factor
- E) Extravascular compression is the main mechanism in sickle cell patients

A 55-year-old male patient came with pathologic fracture of his femoral neck. The surgeon describes the bone as abnormal and similar features are seen radiologically in the whole femur. The histological examination of the fractured bone revealed an abnormal lamellar bone with a characteristic "mosaic pattern". Identify the best statement describing this disease:

- A) Increased badly formed bone due to genetic and environmental factors
- B) Autosomal dominant disorder of collagen type I synthesis
- C) X-linked disorder of collagen type III synthesis
- D) The osteosclerotic phase is the initial phase of the disease
- E) Congenital disorder of increased osteoprotegerin (OPG) activity

The brown tumor, osteoporosis and osteitis fibrosa are related to:

- A) Osteogenesis Imperfecta
- B) Untreated primary HPT
- C) Marble bone disease
- D) Osteomalacia

A 17-year-old girl suffers a spiral fracture of her right tibia, and the leg is casted. Unfortunately, the fracture does not heal correctly due to excessive motion and interposition of soft tissue at the fracture site. Which of the following represents the most likely complication of nonunion in this patient:

- A) Codman triangle formation
- B) Cup-shaped epiphysis
- C) Involucrum formation
- D) Osteomyelitis
- E) Pseudoarthrosis

Which of the following is true regarding paget disease:

- A) Measles virus is the only suspected cause
- B) More than one bone is involved in most cases
- C) Osteoprotegerin (OPG) is stimulated, inhibiting osteoclast's differentiation
- D) A radiograph showing mosaic appearance is pathognomonic for paget

اللهم بارك على محمد وعلى آل محمد كما باركت
على إبراهيم وعلى آل إبراهيم إنك حميد مجيد

Ans: B

Which one of the following statements best describes bone fractures:

- A) Non-displaced fractures are always compound
- B) Simple fractures always communicate with skin
- C) Greenstick fractures occur mainly in mature flat bones
- D) Pathologic fractures are very common in young adults
- E) Compound fractures are most likely displaced

A patient was diagnosed with renal failure in early stage. Parathyroid glands are noticed to be stimulated with no hyperplasia. Which if the following may be found in serum:

- A) High levels of Alkaline phosphatase
- B) Low levels of Phosphate
- C) Low levels of Calcium
- D) Low levels of parathyroid hormone(PTH)

A 24-year-old man on chronic corticosteroid therapy for severe asthma presents with a 6-month history of increasing hip pain. This patient most likely exhibits symptoms of which of the following metabolic bone diseases?

- A) Gaucher disease
- B) Osteomalacia
- C) Osteopetrosis
- D) Osteoporosis
- E) Paget disease

A 4-year-old girl is brought to the pediatrician's office. Her mother says that she noticed that her legs seem unsteady and bowed when the girl stands. She noticed this for the first time 2 months ago. What is the most likely diagnosis:

- A) Osteopenia
- B) Osteoporosis
- C) Paget disease
- D) Rickets
- E) None are correct

Male patient complaining of bone pain in the hip , X-ray shows sclerotic, lytic and mixed lesions, which of the following serum measures an help in diagnosis?

Ans: elevated levels of alkaline phosphate but normal calcium and phosphate levels

For any feedback, scan the code or click on it.



Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			

رسالة من الفريق العلمي:

93:5

New!

وَلَسَوْفَ يُعْطِيكَ رَبُّكَ فَتَرْضَىٰ ۗ

And 'surely' your Lord will give so much to you that you will be pleased.



أَنْتَ تَسْتَطِيعُ

فَقَطْ إِبْدَأْ

سُورَةُ الْبَقَرَةِ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

إِنَّ فِي خَلْقِ السَّمَوَاتِ وَالْأَرْضِ وَاخْتِلَافِ اللَّيْلِ وَالنَّهَارِ
وَالْفُلْكِ الَّتِي تَجْرِي فِي الْبَحْرِ بِمَا يَنْفَعُ النَّاسَ وَمَا أَنْزَلَ اللَّهُ
مِنَ السَّمَاءِ مِنْ مَّاءٍ فَأَحْيَا بِهِ الْأَرْضَ بَعْدَ مَوْتِهَا وَبَثَّ فِيهَا
مِنْ كُلِّ دَابَّةٍ وَتَصْرِيفِ الرِّيْحِ وَالسَّحَابِ الْمُسَخَّرِينَ
السَّمَاءِ وَالْأَرْضِ لآيَاتٍ لِقَوْمٍ يَعْقِلُونَ ﴿١٦٤﴾