



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Date 15/1/21

From  
Dr. Boblee James,  
Professor and Head,  
Orthopaedics,  
SLIMS,  
Pondicherry.

To  
The Dean,  
SLIMS,  
Pondicherry.

**Sub: Permission to conduct value-added course: benign bone tumors**

Respected Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: BENIGN BONE TUMORS on 2/2/21 . We solicit your kind permission for the same.

Kind Regards

**DR. BOBLEE JAMES**

---

### FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: Dr. Jayakumar

The HOD: Dr. Boblee James

The Expert: Dr. Vijayakumaran.

The committee has discussed about the course and is approved.



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPPAKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Dean

(Sign & Seal)

PROFESSOR & HOD  
DEPARTMENT OF PHARMACOLOGY  
Sri Lakshmi Narayana Institute of Medical Sciences  
PONDICHERRY - 605 502.

Subject Expert

(Sign & Seal)

Department of Orthopaedics  
Sri Lakshmi Narayana Institute of Medical Sciences  
Pondicherry - 605 502.

HOD

(Sign & seal)

PROFESSOR & HOD  
Department of Orthopaedics  
Sri Lakshmi Narayana Institute of Medical Sciences  
Pondicherry - 605 502.



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### Circular

07.06.2021

**Sub: Organising Value-added Course: BENIGN BONE TUMORS**

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **BENIGN BONE TUMORS 30 hrs & FEB 2021-may 2021**

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before FEB 2021 - MAY 2021. Applications received after the mentioned date shall not be entertained under any circumstances.

**Dean**

**PROFESSOR & MOD  
DEPARTMENT OF PHARMACOLOGY  
Sri Lakshmi Narayana Institute of Medical Sciences  
PONDICHERRY - 605 502.**



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### COURSE PROPOSAL

**Course Title: Benign bone tumors**

**Course Objective: To assess the benign bone tumors**

**Course Outcome: types & management**

**Course Audience:20**

**Course Coordinator:dr.Jayakumar**

**Course Faculties with Qualification and Designation:**

**1. DR.BOBLEE JAMES Ms ortho**

**Course Curriculum/Topics with schedule (Min of 30 hours)**

SINo	Date	Topic	Time	Hours
1	2/2/21	BONE FORMING TUMORS	4.30 to 5	1/2
2	9/2/21	CARTILAGENOUS TUMORS	4 to 6	2
3	16/2/21	FIBROUS LESIONS	4.30 to 5.30	1
4	23/2/21	FATTY TUMORS	4 to 7	3
5	29/2/21	VASCULAR TUMORS	4.30 to 6.30	2
6	05/03/21	SOFT TISSUE TUMORS	6.30 to 7	1/2
7	11/3/21	ANEURYSMAL BONE CYST	4.30 to 5.30	1
8	18/3/21	PRACTICAL SESSION	4 to 7	3
9	24/3/21	PRACTICAL SESSION	4 to 6	2
10	31/3/21	PRACTICAL SESSION	3 to 7	4
11	07/04/21	PRACTICAL SESSION	4 to 6	2
12	15/04/21	PRACTICAL SESSION	4 to 7	3
13	23/04/21	PRACTICAL SESSION	4 to 6	2
14	11/05/21	PRACTICAL SESSION	4 to 6	2
15	24/05/21	PRACTICAL SESSION	4 to 6	2
			Total Hours	30

#### REFERENCE BOOKS:

DABLIN'S BONE TUMOR

KRISHNAN UNNI



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

DIAGNOSIS OF BENIGN BONE TUMORS

BROOKE CRAWFORD

### VALUE ADDED COURSE

**1. Name of the programme & Code**

Benign bone tumors – OR02

**2. Duration & Period**

30 hrs & FEB 2021-may 2021

**3. Information Brochure and Course Content of Value Added Courses**

*Enclosed as Annexure- I*

**4. List of students enrolled**

*Enclosed as Annexure- II*

**5. Assessment procedures:**

Short notes- *Enclosed as Annexure- III*

**6. Certificate model**

Value Added Course- FEB 2021-MAY 2021					
Sl. No	Course Code	Course Name	Resource Persons	Target Students	Strength & Year
1	OR02	Benign bone tumors	Dr. Boblee james	THIRD YEAR MBBS	20 (FEB 2021- may 2021)

*Enclosed as Annexure- IV*

**7. No. of times offered during the same year:**

1 FEB 2021 · may2021

**8. Year of discontinuation: 2022**

**9. Summary report of each program year-wise**

**10. Course Feed Back** *Enclosed as Annexure- V*

PROFESSOR & HOD  
Department of Orthopaedics  
Sri Lakshmi Narayana Institute of Medical Sciences  
Pondicherry - 605 502.

RESOURCE PERSON  
DR.BOBLEE JAMES

DEAN  
Sri Lakshmi Narayana Institute of Medical Sciences  
Osudu, Ageram Kudapakkam, Post,  
Villianur Commune Puducherry-605 502.

COORDINATOR  
DR.JAYAKUMAR



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]





OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### **BENIGN BONE TUMORS**

2/2/21

### **BENIGN BONE TUMORS**

<b>Particulars</b>	<b>Description</b>
Course Title	BENIGN BONE TUMORS
Course Code	OR02
Objective	1. BONE FORMING TUMORS 2. CARTILAGENOUS TUMORS 3. FIBROUS LESIONS 4. FATTY TUMORS 5. VASCULAR TUMORS 6. SOFT TISSUE TUMORS 7. ANEURYSMAL BONE CYST
Further learning opportunities	RARE CASES OF BENIGN TUMORS
Key Competencies	On successful completion of the course the students will have a understanding of diagnosing a bone tumors .
Target Student	Pre final years
Duration	30hrs February – may 2021
Theory Session	10hrs



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Practical Session	20hrs
Assessment Procedure	Short notes.

### CLASSIFICATION:

#### BONE FORMING TUMORS

- Osteoid Osteoma
- Bone Island

#### CARTILAGENOUS TUMORS

- Chondroma
- Osteochondroma

#### FIBROUS LESIONS

- Non-ossifying fibroma
- Cortical Desmoid
- Benign Fibrous Histiocytoma
- Fibrous Dysplasia
- Osteofibrous Dysplasia
- Desmoplastic Fibroma

#### CYSTIC LESIONS





OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]

[ Affiliated to Bharath University, Chennai - TN ]

- Unicameral Bone Cyst

- Aneurysmal Bone Cyst

### FATTY TUMORS

- Lipoma

### VASCULAR TUMORS

- Haemangioma

### NON-NEOPLASTIC CONDITIONS MIMICKING BONE TUMORS

- Pagets' Disease

- Brown Tumor

- Bone infarct, osteomyelitis, stress fracture, post traumatic osteolysis

### BENIGN/AGGRESSIVE TUMORS

- Giant Cell Tumor

- Chondroblastoma

- Chondromyxoid Fibroma

- Osteoblastoma

- Langerhans' Cell Histiocytosis

### **CLASSIFICATION OF SOFT TISSUE TUMORS:**

FATTY



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]

[ Affiliated to Bharath University, Chennai - TN ]

- Lipoma

### NERVE SHEATH TUMORS

- Neurilemmoma (Schwannoma)

- Neurofibroma

### SYNOVIAL LESIONS

- Synovial chondromatosis

- Pigmented Villonodular Synovitis

-Germ Cell Tumor of Tendon Sheath

### VASCULAR

- Intramuscular haemangioma

-GlomusTumor

### FIBROUS LESIONS

- Nodular Fascitis

- Desmoid tumors

### **OSTEOID OSTEOMA:**

Common in 2nd -3 rd decades

M:F – 3:1

Common sites – Lower extremities – long bones, Spine

Typical pain – worse at night, relieved by NSAIDS.

Joint – Stiffness, swelling, contracture



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]

[ Affiliated to Bharath University, Chennai - TN ]

Spine – Scoliosis

Imaging – Cortical radiolucent nidus <1.5cm with marked cortical thickening (Xray/CT).

Marked uptake on TC99 bonescans

Histology –Trabeculae surrounded by loose fibrovascular tissue

Treatment

- NSAIDS

- Burr Down Technique

- RF ablation

BONE ISLAND A.K.A “Enostoses”

Benign lesions of cancellous bone

Common in adults, sites – Pelvis, femur

Usually asymptomatic

Imaging studies - Small round area of increased density in cancellous bone with radiating spicules at periphery.

Mature bone with thickened trabeculae that merge with normal bone at the periphery

Treatment – Observation.

If patient experiences pain and lesion grows, biopsy done to rule out more aggressive lesions such as sclerosing osteosarcoma, blastic metastasis or a sclerotic myeloma.



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### **CARTILAGENOUS TUMORS CHONDROMA:**

Benign lesions of hyaline cartilage

Common in adults; M=F

Common sites – Phalanges of the hand, small bones of hand and feet

Asymptomatic usually, discovered incidentally/after a pathologic fracture  
Intramedullary canal – “Enchondroma”

Olliers’ Disease – Multiple enchondromatosis – cartilaginous tumors appear in the large and small tubular bones and in flat bones – due to failure of normal enchondral ossification.

Olliers’ + Haemangiomas = Maffucci syndrome

Imaging - Lobulated areas of stippled calcification (Popcorn/punctate calcification), Minimal cortical erosion (except in hand).

Histology - Benign-appearing hyaline cartilage. Solitary Enchondromas – Observation with serial radiographs. If stable radiographically, no further intervention is indicated.

- Symptomatic – Curettage
- Multiple enchondromatoses – Deformities treated by osteotomy

### **OSTEOCHONDROMA:**

More developmental malformations than true neoplasms

- Originate within the periosteum as small cartilaginous nodules
- Slight male predominance. 2nd -3 rd decade.

Metaphysis of long bones



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

- Multiple hereditary exostoses (MHE) is autosomal dominant —mutation of *EXT1* or *EXT2*

Presentation - Mass; may be painful secondary to irritation of soft tissue structures, fracture, or overlying bursa.

Two types – Pedunculated or Sessile.

Pedunculated more common. Imaging studies – Plain radiograph/CT/MRI (Confirmatory) – Pedunculated or sessile bone lesion that communicates with the intramedullary canal of the host bone + Cartilage cap

Histological features – Similar to epiphysis of the bone which undergoes enchondral ossification

Treatment – Observation if asymptomatic

En bloc resection – if symptomatic, with removal of the cartilage cap.

- Malignant degeneration – rare – 1% solitary,

5% in multiple hereditary exostoses.

### **FIBROUS LESION- NON OSSIFYING FIBROMA:**

AKA – metaphyseal fibrous defects, fibrous cortical defects and fibroxanthomas

Common developmental abnormalities – 1 st - 2 nd decade

Site – Metaphyseal region of long bones; mostly in distal femur, tibia and fibula  
Radiology – Well defined lobulated lesion located eccentrically in the metaphysis with sclerotic margins

Presentation – Incidental finding on xrays / pathological fracture at the site of lesion

Histology – Bland appearing spindle cells Arranged in a storiform pattern within a collagenous matrix. Fibroblastic proliferation is present.



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Jaffe-Campanacci syndrome – Multiple nonossifying fibromas with café-au-lait spots. □

Treatment – Observation, curettage if large Fractures are usually treated non-operatively.

### **CORTICAL DESMOID:**

Irregularity in the posteromedial aspect of the distal femoral epiphysis, possibly a reaction to the pull of adductor magnus 2 nd decade of life. Males.

Usually asymptomatic. Xray shows erosion of the posteromedial distal femoral cortex with a sclerotic base. Best seen with LL externally rotated 20-45 degrees.

Histology – Fibrous tissue with collagenous stroma. Similar to NOF.

□ Treatment - Observation

### **BENIGN FIBROUS HISTIOCYTOMA:**

Dahlin in 1978

□ Common in 4th – 5 th decades. Equal predilection in both sexes.

□ More common in soft tissues than bone. Pelvis, femur

□ Histologically similar to non-ossifying fibroma but much more aggressive in behaviour and radiological characteristics.

Presentation – progressive pain

□ Xray – Lytic, expanding lobulated centrally lucent lesion with sclerotic rim with little periosteal reaction.

□ Treatment – Curettage – extended or wide resection d/t local recurrence.

### **FIBROUS DYSPLASIA:**



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]

[ Affiliated to Bharath University, Chennai - TN ]

Replacement of normal bone and marrow by fibrous tissue and small, woven spicules of bone. Monostotic/Polyostotic.

Common – 1 st to 3rd decades. M=F

Can occur in the epiphysis, metaphysis or diaphysis

Presentation – Pain, deformity, cutaneous pigmentation and endocrine abnormalities

(McCune Albright Syndrome), sexual precocity, intramuscular myxoma (Mazabraud syndrome) and thyroid disease.

Histology – Irregularly woven bone spicules

with a fibrous stroma

Imaging –Ground glass appearance, granular with a well-defined sclerotic rim. Small areas of cartilaginous metaplasia and cystic changes may be present

Treatment – Surgical treatment – significant deformity or pathological fracture or pain – intramedullary fixation/osteotomy.

Treatment with bisphosphonates for extensive disease

### **OSTEOFIBROUS DYSPLASIA:**

A.K.A Campanacci disease

- Ossifying fibroma of long bones
- Common 2nd -3 rd decade of life – usually affecting the tibia and fibula
- Presentation –Asymptomatic unless there's a pathological fracture – anterior bowing.

Radiologically – Multicentric radiolucent lesions of the cortex of the tibia



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

- Histologically – Irregular trabeculae with prominent osteoblastic rimming in a loose fibrous stroma
- Treatment – Observation, Fractures usually non-operatively, deformity correction.

### **DESMOPLASTIC FIBROMA:**

Extremely rare, locally aggressive benign bone tumor – bony counterpart of the desmoid tumor.

All age groups – common in 2nd and 3rd decade

Long tubular bones most often involved apart from skull, mandible, pelvis and spine

- Pain is the chief complaint + Pathological fracture

Radiological – Radiolucent lesion with cortical erosion; may have septations; soft tissue mass

- Histologically – Fibroblastic, hypocellular, much collagen and few mitoses
- Treatment options – extended curettage, wide resection. Adjuvant treatments – radiation, anti-inflammatory agents, tamoxifen and cytotoxic agents.

### **CYSTIC LESIONS- UNICAMERAL BONE CYST:**

Developmental/reactive lesion

- 1st – 2nd decades. M:F = 2:1
- Any extremity; most common – proximal humerus and femur. Ilium and calcaneum.
- Active during skeletal growth and heal spontaneously at maturity

Asymptomatic unless pathological fracture





OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

□ Radiologically – Centrally located, purely radiolucent lesion which concentrically expands the cortex. No cortical destruction

□ Cyst filled with straw colored fluid. Thin fibrovascular lining.

Observation

Aspiration

Injection of steroids/bone marrow/bone graft substitutes

Curretage □

### **ANEURYSMAL BONE CYST:**

Locally destructive, blood filled reactive lesions of bone.

□ Any bone. Most commonly proximal humerus, distal femur, proximal tibia and spine – 15% (posterior elements)

□ Common in 1st -2 nd decade, female predominance. Presentation – Pain. Rapid growth can mimic a malignancy. Spinal lesions – neurological deficits.

□ Radiology – Eccentric, expansile radiolucent lesion, thin cortical shell. Fluid levels evident on MRI

Histology – Haemorrhagic cavernous spaces, septae of fibroblasts, histiocytes, haemosiderin laden macrophages and giant cells.

□ Solid variant of aneurysmal bone cyst – “giant cell reparative granuloma”

Surgical treatment – extended curretage and grafting with a bone graft substitute under tourniquet control.

□ Spine/Pelvic lesions – Preoperative embolization.

□ Low dose radiation – associated with malignant transformation.



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### **INTEROSSEOUS GANGLION CYST:**

Occur in the ends of long bones of middle aged men – particularly distal tibia.

- Intraosseous extensions of ganglia of local soft tissues
- Xray/MRI – uniloculated or multiloculated, well demarcated with a rim of sclerotic bone.
- Treatment 0 Local excision of overlying soft tissue and curettage

### **DERMOID CYST:**

Cysts filled with keratinous material

- Histologically lined with squamous epithelium.
- Resemble epidermal inclusion cysts of the skin.
- Rarefied defects surrounded by sclerotic bone

### **RARE TUMORS: INTEROSSEOUS LIPOMA**

Relatively rare

- Adults, M=F
- Asymptomatic, discovered as incidental findings.
- Radiology – Well defined lucencies with a thin rim of reactive bone.  Histologically – Fatty tissue with focal areas of necrosis.



OFFICE OF THE DEAN

## **Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

- Surgery – only if symptomatic – simple curettage

### **HEMANGIOMA:**

Common benign bone lesion. 10% population has asymptomatic lesions in vertebral bodies.

- Skull, long bones uncommon.
- Usually incidental findings.
- Rarely symptomatic unless there is vertebral collapse or nerve root or cord compression.

Radiographic appearance – Characteristic thickened vertically oriented trabeculae –  
“Jailhouse” appearance

Cross section – “Polka-dot” pattern

MRI – bright on T1 and T2 weighted images.

- Asymptomatic – no treatment required
- Vertebral collapse with neurological deficit – decompression with spinal stabilization.

Long bones – extended curettage

Pre-op embolization to prevent blood loss.

Low dose radiation – risk of malignant transformation



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### VALUE ADDED COURSE

Benign bone tumors

OR02

#### 4. List of Students Enrolled feb 2021 – may- 2021

Pre final Year MBBS Student			
Sl. No	Name of the Student	Roll No	sign
1	BALASUBRAMANIAN.R.	U13MB171	<i>Balan</i>
2	BENCY.L.	U13MB172	<i>L.B</i>
3	BHARANIDARAN.E.	U13MB173	<i>Barani</i>
4	BRINDHA.M.	U13MB174	<i>M.B</i>
5	CHRIS ANDREW AJAY SRIPATHAM	U13MB175	<i>CAS</i>
6	CHRISTOPHER. A.	U13MB176	<i>Chmoo</i>
7	DHATCHAYANI.	U13MB178	<i>Dhatchayani</i>
8	DEVIKA. G.	U13MB177	<i>Devika</i>
9	DINESH KUMAR.P.	U13MB179	<i>D.K</i>
10	DIVYA.A.	U13MB180	<i>A.d.</i>
11	ELAVAZHAGHAN. R.	U13MB181	<i>R. Elavazhagan</i>
12	GANESH. S.	U13MB182	<i>Ganesh</i>
13	GAYATHRI.T.	U13MB183	<i>T. Gayatri</i>
14	GNANAKANNAN.G.	U13MB184	<i>Gnanakannan</i>
15	HARESH.S.	U13MB185	<i>Hareesh</i>
16	HEMA PRIYA.K.	U13MB186	<i>Hema</i>
17	INDHUJA. M.	U13MB187	<i>Induja</i>
18	IREEN SUGITHA RANI.J.	U13MB188	<i>I.S.R.J</i>
19	JAVEED IBRAHIM.J.	U13MB189	<i>Javeed</i>
20	JEEVIHA.R.	U13MB190	<i>Jeeviha</i>



OFFICE OF THE DEAN

**Sri Lakshmi Narayana Institute of Medical Sciences**

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

## Course/Training Feedback Form

Course: benign bone tumors  
Date: 24/5/21  
Name: CHRISTOPHER.A  
Reg NO.  
Department: ortho

Q 1: Please rate your overall satisfaction with the format of the course:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 2: Please rate course notes:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 3: The lecture sequence was well planned

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 4: The lectures were clear and easy to understand

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 5: Please rate the quality of pre-course administration and information:

a. Excellent b. Very Good c. Satisfactory d. unsatisfactory

Q 6: Any other suggestions:

Comments:

Thank you for taking the time to complete this survey, your comments are much appreciated.

OPTIONAL Section: Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]

[ Affiliated to Bharath University, Chennai - TN ]

Handwritten notes on a page:

- 1) How to assess & evaluate various types of Bone tumours
- 2) Mg. of various types of Bone tumours
- 1) Assessment and evaluation of Bone tumor
  - The differential diagnosis is based on history, physical examination, diagnostic studies
  - AGE: < 5 yrs → malignant tumour is often metastatic neuroblastoma
  - 5 - 15 yrs → Osteosarcoma, Ewing sarcoma
  - > 40 yrs → metastases / myeloma

④ - Diagnostic studies ✓ X-Rays ✓ Bone scan ✓ CT  
✓ MRI ✓ PET ✓ Biopsy

✓ X-rays show location, size, shape ;  
chest X Ray - to detect presence of lung metastasis

Bone scan small amount of radioactive material is injected into blood vessels it then collects in the bones, detected by a scanner

Biopsy : 

- needle biopsy
- incisional biopsy

Blood test alkaline phosphatase (elevated)



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPPAKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### Osteoblastoma:

- Long bones ( Diaphysis or metaphysis ) but never in 2nd decade of life.
- Achy pain
- Radiologically - well defined radiolucent areas.
- Expansile bone lesion 2-10cm & size.

### Chondroblastoma

- young adults, near epiphyseal plate.
- Bones round knee - commonly involved.
- Radiologically - well defined lytic lesion, mottled appearance.

### Hemangioma

- Commonly vertebra & skull.
- young adults.
- asymptomatic.
- Radiologically - loss of horizontal striations, prominence of vertical striations of affected vertebral body.

### Adamantioma

- jaw, lower-half tibia.
- 10-35 years of age.
- Hereditary pain, increase in size gradually.
- X-ray - Honey Comb-like.

### Chordoma

- Locally malignant
- Remits chondroid - Sacrum, Cervical spine
- Persistent pain, Swelling, Neurological deficit
- X-ray - Bone destruction.





OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

1) Various types of benign bone tumours.  
2) Signs and symptoms of benign bone tumours.

1) Types of BENIGN BONE TUMOURS:-

- i) Osteoma.
- ii) Osteoid Osteoma.
- iii) Osteoblastoma.
- iv) Chondroblastoma.
- v) Hemangioma of the bone.
- vi) Adamantinoma.
- vii) Chordoma.

3) Signs and Symptoms

Osteoma

- Visible swelling.
- Bulge into all sinuses (frontal, ethmoidal or sphenoid) and cause obstruction to sinus cavity - leading to pain.
- most often skull and facial bones.

Osteoid Osteoma

- Common in 5-25 years.
- bones of lower extremity (Femur).
- Generally located in the diaphysis of long bone.
- posterior elements of vertebrae.
- Nighty pain, worst at night, relieved by salicylates.
- Tenderness at site of lesion.
- X-ray - visible zone of sclerosis surrounding a radiolucent nidus.

14 / 20



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

### 2) Management of Bone tumour

— General ~~or~~ methods ✓ chemotherapy  
✓ Radiotherapy ✓ surgical (limb salvage  
amputation)  
✓ Targeted therapy

↳ Solitary Bone lesion in previous H/O malignancy  
should not be assumed a metastatic lesion

↳ metastatic bone tumor — Palliative care

↳ epiphyseal, metaphyseal lesions — Prosthetic  
replacement

↳ osteosarcoma, ewing's — Neoadjuvant chemo,  
surgery

3) ↳ chondrosarcoma — not sensitive to chemo,  
radiotherapy  
— Treatment is surgical



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P-II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]



### Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research  
(Deemed to be University under section 3 of the UGC Act 1956)



#### CERTIFICATE OF MERIT

This is to certify that CHRISTOPHER . A has actively participated in the Value Added Course on *Benign bone tumors* held during FEB2021 – MAY 2021 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. BOBLEE JAMES  
RESOURCE PERSON

Dr. JAYAKUMAR  
COORDINATOR



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Vivo V15Pro  
All India Camera

## Student Feedback Form

Course Name: **BENIGN BONE TUMORS**  
Subject Code: OR02

Name of Student: Anbazhagan D Roll No.: U13MB159

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance

Sl. No	Particulars	1	2	3	4	5
1	Objective of the course is clear					✓
2	Course contents met with your expectations					✓
3	Lecturer sequence was well planned					✓
4	Lectures were clear and easy to understand					✓
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful					✓
7	The level of the course					✓
8	Overall rating of the course	1	2	3	4	5

\* Rating: 5 - Outstanding; 4 - Excellent; 3 - Good; 2 - Satisfactory; 1 - Not-Satisfactory

Suggestions if any:

Anbazhagan D  
Signature



OFFICE OF THE DEAN

## Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

Date:25/5/21

From  
Dr.Boblee James ,  
Orthopaedics,  
SLIMS,  
Pondicherry.

Through Proper Channel

To  
The Dean,  
SLIMS,  
Pondicherry.

### **Sub: Completion of value-added course: Benign bone tumors**

Respected Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **benign bone tumors** on 24/05/21. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards

Dr.Boblee James

PROFESSOR & HOD  
Department of Orthopaedics  
Sri Lakshmi Narayana Institute of Medical Sciences  
Pondicherry - 605 502.

**Encl: Certificates**

**Photographs**



OFFICE OF THE DEAN

# Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,  
PUDUCHERRY - 605 502.

[ Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME ( P -II ) dt. 11/07/2011 ]  
[ Affiliated to Bharath University, Chennai - TN ]

