Manage TB
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Lecture – 18
Radiology in diagnosis of Tuberculosis
Session 03

Welcome to the next session; the Radiology in the diagnosis of Tuberculosis.

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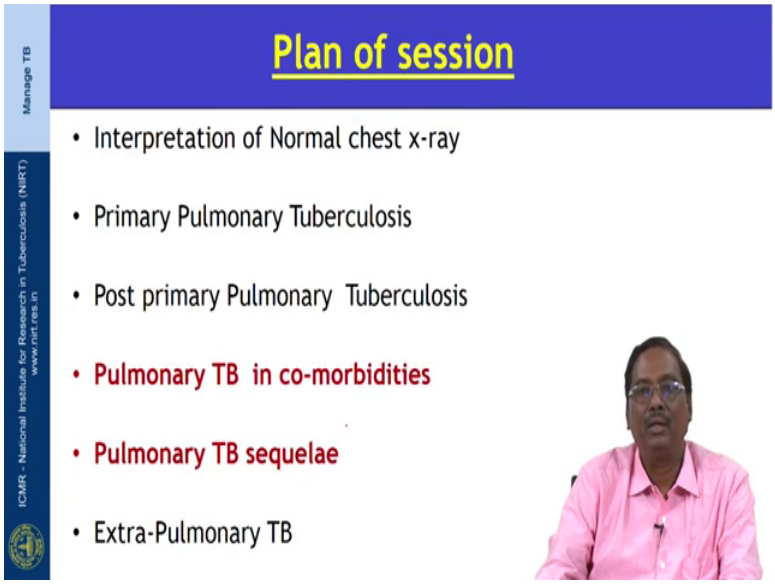

Next we will discuss the radiological features in a pulmonary TB in co-morbidities, I will pulmonary TB sequelae.

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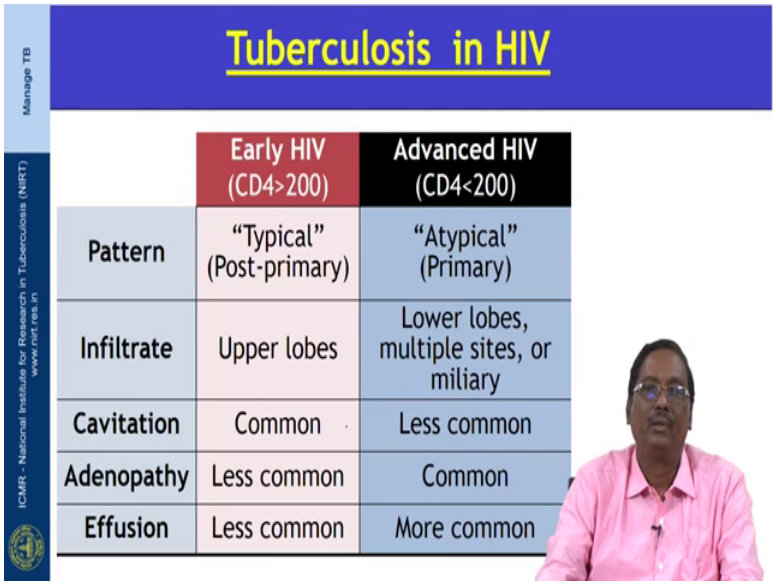

Tuberculosis is the most common opportunistic infection; affecting HIV seropositive patients and remains the most common cause of death in patients with HIV. HIV TB can occur in any stage of HIV, but dead logical pattern of TB in HIV depends on the immune status of the patient and CD 4 count. In a patients in with here in with early HIV where CD 4 count is more than 200 the radiological pattern usually a occur a typical post primary pattern.

And the infiltrates are usually in the upper lobe typical and posterior segment; cavitation is more common, adenopathy and if effusion are less common. In a patients with advanced HIV where CD 4 count is less than 200, that radiological features look like a Atypical presentation of primary TB and infiltrates are seen more in the lower lobe and multiple sites and they may have a miliary pattern. Cavitation are less common in advance HIV, but adenopathy and effusion are more common in a advanced HIV.

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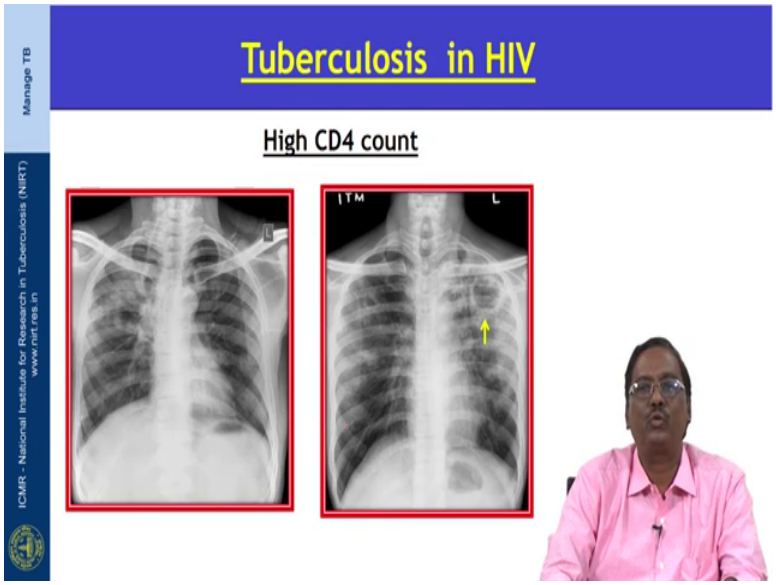

This X-ray showing tuberculosis in HIV where the CD 4 count are very high; so there is a classical of a consolidation it is aesopus opacity involving the upper zone; that is typical and posterior segment typical of a post primary and there is also a cavity in the upper lobe.

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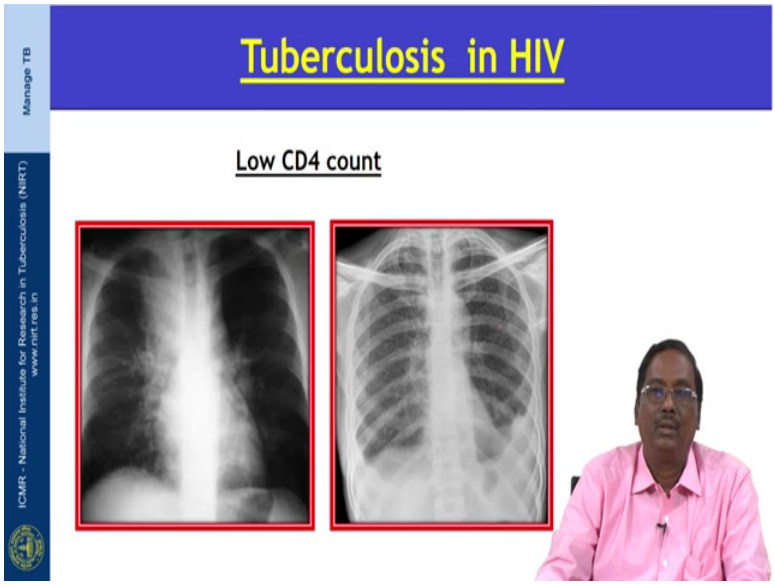

Here there is a tuberculosis in HIV where the CD 4 count are very low this is a X-ray showing right paratracheal adenopathy; it is a similarly of a primary tuberculosis and

here there is a bilateral proliferation and also adenopathy. So, a typical of a radiological feature of a HIV TB in a low HIV of a low CD 4 count.

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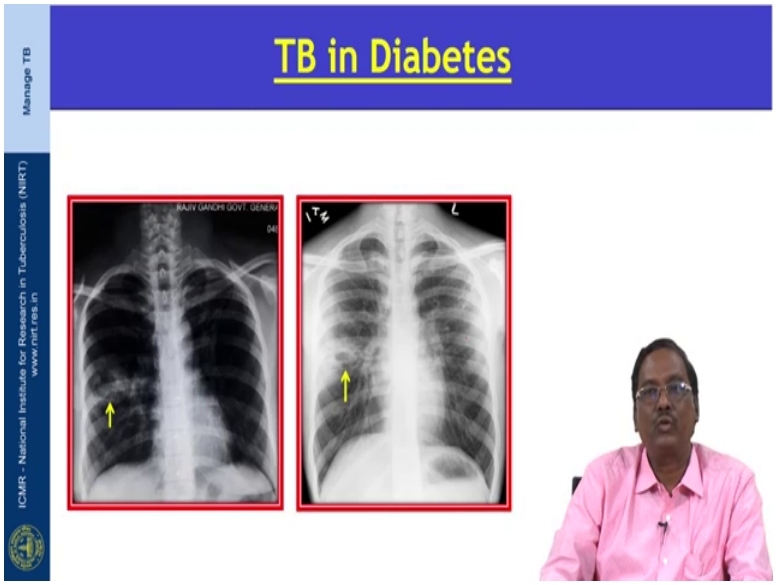

This X-ray shows tuberculosis in diabetes; diabetes estimated to be cause 15 percent of person tuberculosis cases. Patients with a diabetes have four fold increase risk of developing TB there is increased risk of failure, a relapse or delayed sputum conversion. The radiological presentation of tuberculosis in diabetes usually involve a lower lung field; the patterns are different the most important they have cavitation. So, 80 percent of the cases have a cavitation in a lower lung field and there will be nodule in 86 percent and accelerative relation in 22 percent.

So, this is also a lower zone consolidation with the cavity this typical of a TB in diabetes.

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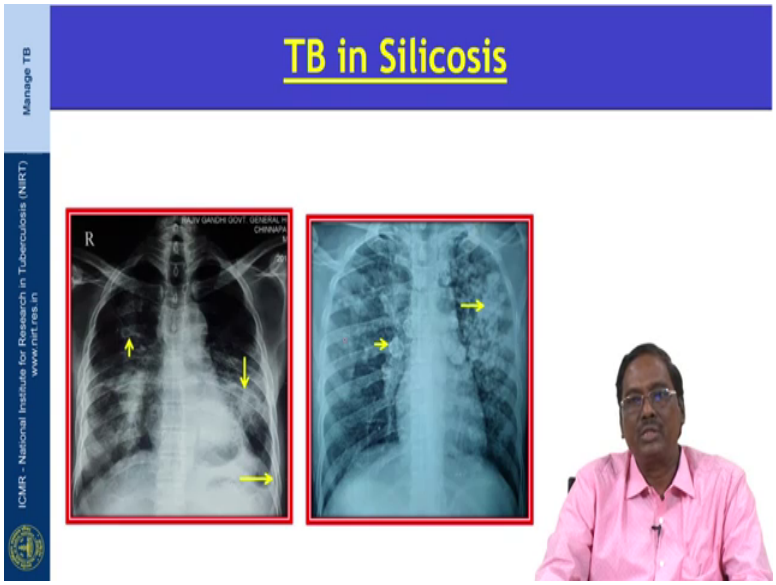

Tuber tuberculosis in silicosis tuberculosis is 3 to 7 times higher in persons with silicosis; radiological diagnosis of TB in silicosis is very difficult because, silicosis itself there will be a nodules and masses the radiological sign of TB in silicosis or when there is a rapidly developing soft (Refer Time: 04:41) nodule or conglomerate mass nodule.

A rapid changes in the radiological picture or presence of cavity in the nodule or opacity surrounding a pre existing nodule or development of pleural effusion and development of any middle lobe collapse because due to bronchial silicosis all these things we can suspect tuberculosis in a silicosis.

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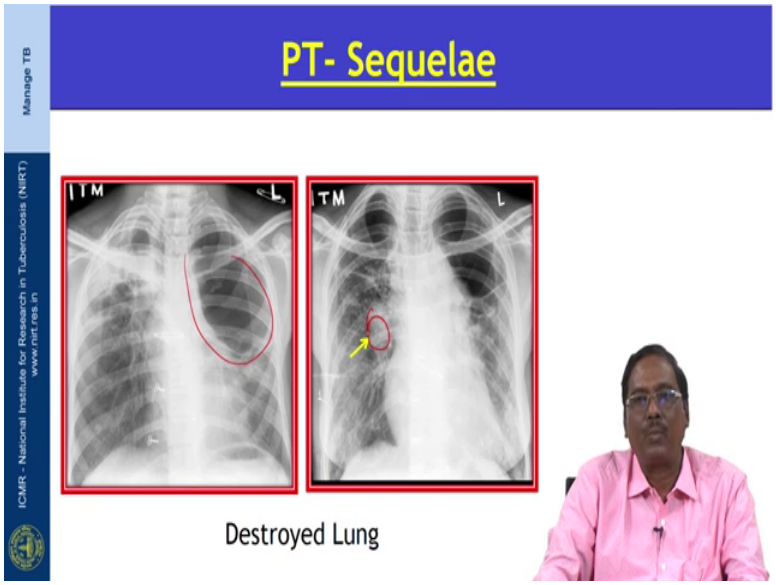

So, coming to PT-sequelae; so sequelae can occur in both primary and post primary tuberculosis up to 40 percent of the patient with post primary they have a marked fibrotic response which manifest as a atelectasis, retraction of the hilum, mediastinal shift to the fibrotic side and compensatory emphysema.

So, what is destroyed lung? So, destroyed lung when will it defined destroyed lung when more than two-third of the lung tissue has been replaced by the cavity or fibrosis we call it as a destroyed lung. There is a complete destruction of the whole lung are major of part of the lung.

So, it is occur in a primary progressive primary TB and also post primary TB because of secondary infections. So, it is a X-ray showing a large cavity so destroyed lung. So, here is a destroyed lung, here there is a hilar enlargement; it is nothing, but this is a dilated pulmonary artery.

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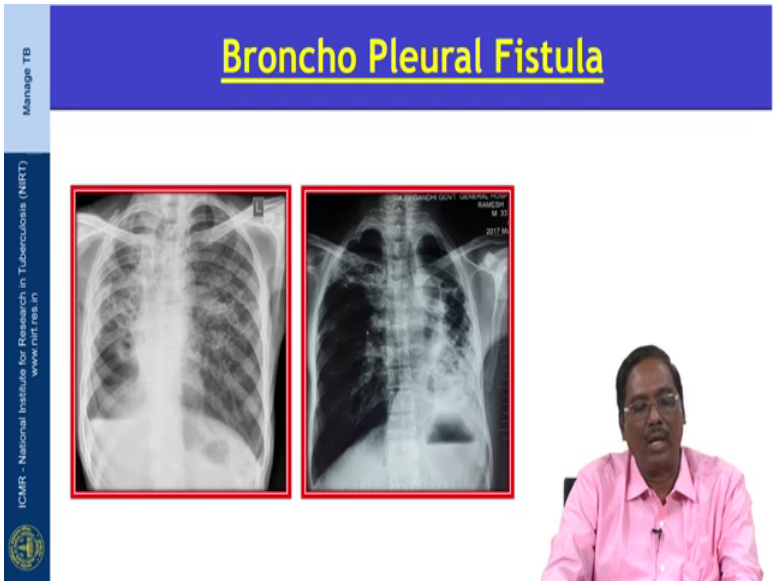

It is because of sequelae of TB because the patient is going for cor pulmonale. So, broncho pleural fistula it is due to establishment of spontaneous communication between bronchial tree and pleural space. The diagnosis is based on increasing amount of sputum production, multiple air cavity with air fluid level and shift of the mediastinum to the same side.

CT can demonstrate site of the communication between the pleural space and a air way. So, here there is a multiple cavity with a fluid level, the shift of the mediastinum to the opposite side. It is the sequelae occurring in a post primary TB.

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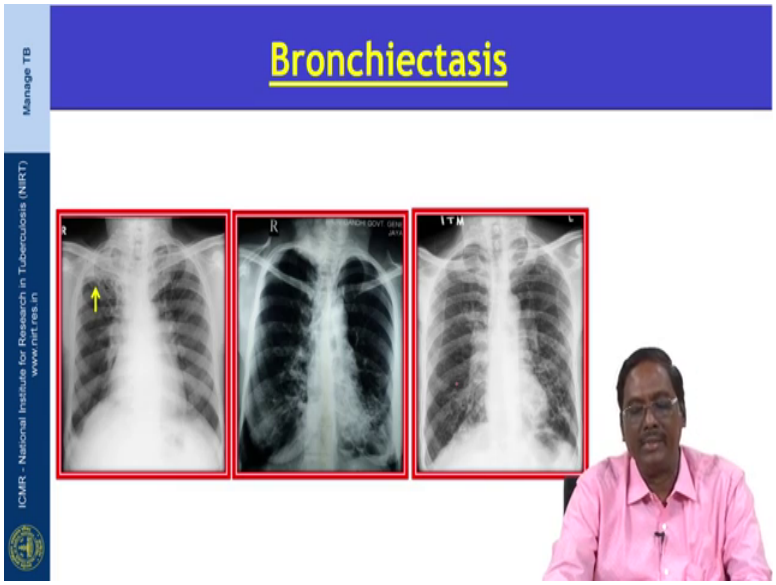

Bronchiectasis bronchiectasis is a accepted universal sequelae of tuberculosis; receive in both primary and post primary tuberculosis. It is in 71 percent to 86 percent of the patients with a inactive disease; this also sometimes seen in a active disease also 30 percent.

The bronchiectasis in TB is due to tubercles bronchitis or this due to fibrosis with subsequent fibrosis or destruction of the and fibrous of the lung parenchyma with a traction bronchiectasis. This X-ray shows a upper lobe bronchiectasis; it is usually seen in a pulmonary tuberculosis, it is a lower lobe see cystic bronchiectasis; here it is a cylindrical bronchiectasis.

These are all as usual seen in a primary TB, here it is a this is a post primary TB presenting with the bronchiectasis of the upper lobe.

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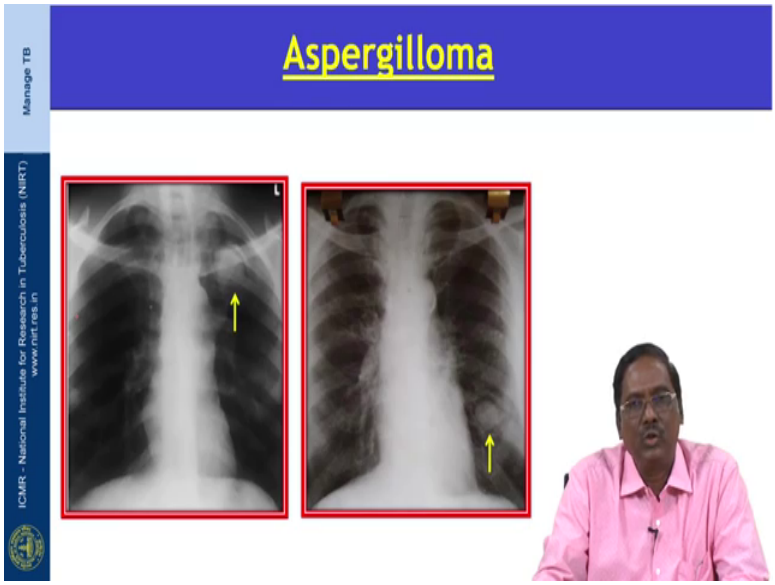

Aspergilloma it is seen in 11 percent of patients with a chronic cavitary disease. It is access for many years without any symptoms. Hemoptysis is the more commonest symptom and it is seen in 80 to 90 percent of the patient. Aspergilloma consists of a say mass of fungal hyphae and mixed with a mucus and a cellular debris.

So, radiologically it present as a mass in a pre existing cavity there is a presence of a air presents around the mass. So, we call it as a radiological sign we called as a monod sign.

So, here it is also a presence of a aspergilloma in a pre existing; cavity the complication is a hemoptysis.

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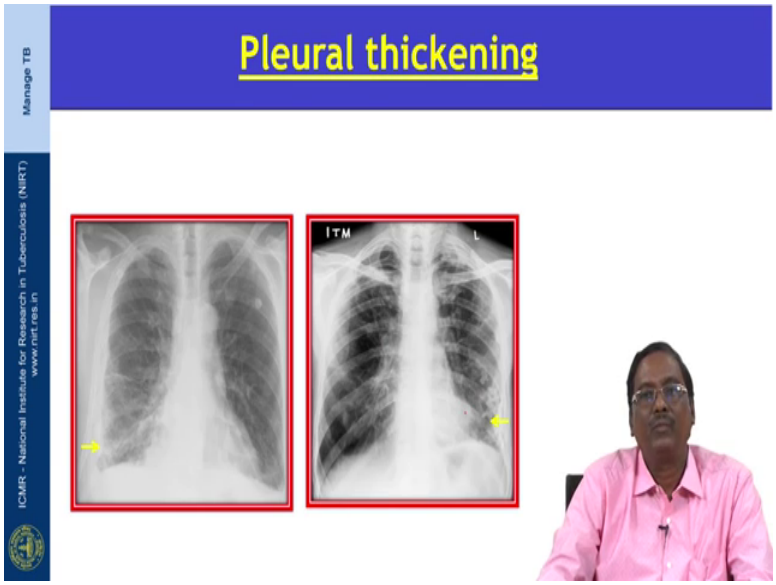

Next is a pleural thickening. So, in a pleural effusion due to post primary TB; the pleural effusions are infected. So, it present as a loculated effusion and there is a delay in healing, they form more of a pleural thickening or calcification.

So, pleural thickening is seen in the visceral pleural layer. So, in a tuberculosis thickening is seen in a visceral pleural air, parietal pleura is rarely involved.

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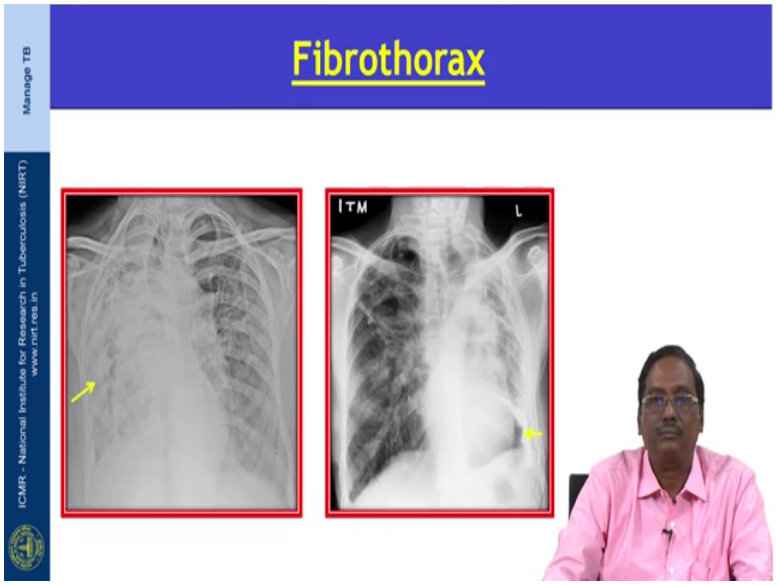

So, this X-ray showing a fibrothorax; it is the most severe form of a pleural fibrosis there is a extensive damage to the visceral pleura; the visceral pleura is completely thicken and there is the fusion of both visceral and a parietal pleura, obliterating the pleural space.

The mediastinum is shifted to the same side; there is a marked volume loss and the affected hemithorax and the also reduce to mobility of the lung. So, this is also a fibrothorax; there is the thickening of the both visceral and a parietal pleura.

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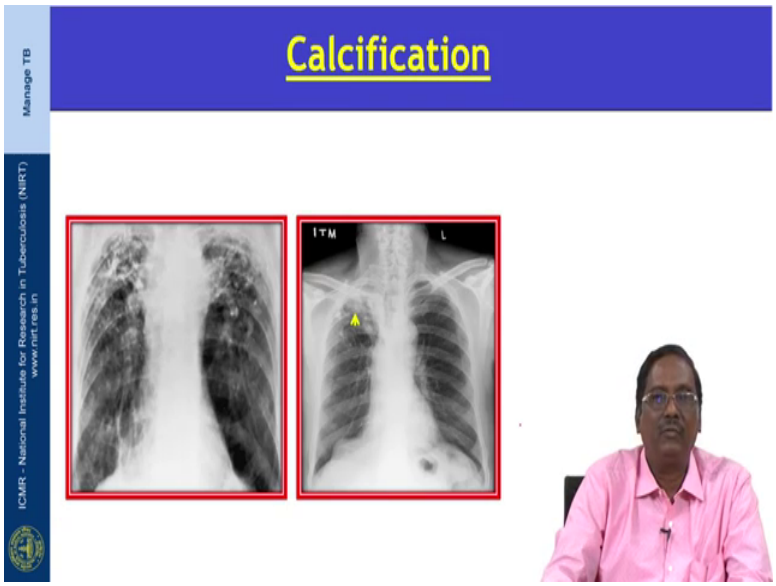

Then this all the various parenchymal calcifications so it is a dystrophic calcification occurring in the damaged lung following a TB infection. This is a local organized process with local deposition of the crystalline hydroxyapatite calcium salt. So, this are all the calcifications. So, we can see them multiple parenchymal calcification.

So, with this we conclude the radiological features in a TB co morbidities and PT-sequelae.

Thank you.