Calcifications are one of the findings that can be seen on your mammogram. These are very small bits of calcium can appear within the soft tissue of your breast. Calcifications are not breast cancer. These aren't always a sign of breast cancer. Sometimes calcifications are an indication of a precancerous condition. They appear as white dots on your mammogram***(cheung YC et al.,2007)***.

Calcifications are divided into two kinds:

- Macrocalcifications are bigger bits of calcium, and are not usually linked to breast cancer***(cheung YC et al.,2007)***.
- Microcalcifications are quite tiny bits of calcium, and may show up in clusters, or in patterns (like circles or lines) and are associated with extra cell activity in breast tissue. Usually the extra cell growth is not cancerous, but sometimes tight clusters of microcalcifications can indicate early breast cancer. Scattered microcalcifications are usually a sign of benign breast tissue***(cheung YC et al.,2007)***.

If your mammogram shows microcalcifications in tight clusters, your doctor or radiologist may recommend that you have to do a diagnostic mammogram, an ultrasound, or a biopsy ***(Evans et al., 2004).***

If you have a couple of microcalcifications that look questionable, you may be asked to come back in six months for a comparative mammogram. That will help the doctors see if any changes are happening ***(Ferranti et al.,2006).***

Macrocalcifications show up in about 50 percent of women over 50, and 10 percent of women under 50 years of age ,macrocalcifications are usually not worrisome and won't require a biopsy***(Ferranti et al.,2006).***

Inspite of 80 percent of microcalcifications are benign ,microcalcifications can help detect ductal carcinoma in situ (DCIS) ***(cheung YC et al.,2007)***.

Fine-needle aspiration cytology (FNAC) has been used to aid the diagnosis of mammographic microcalcification for many years . A recent review of the literature comparing FNAC with core biopsy has shown that the absolute sensitivity of core biopsy is higher than that of FNAC ***(Evans et al., 2004).***

Factors that should be taken into account when deciding whether to recall are their morphology, the distribution of the calcifications and the cluster shape***(Ferranti et al.,2006).***

Number, there is no magic number of calcific flecks above which clusters should be recalled and below which clusters should not be recalled. Three granular calcifications in a ductal distribution warrants recall, where four or five punctate calcifications in a round cluster with similar calcific flecks scattered elsewhere within the ipsilateral and contralateral breast probably do not warrant recall. It should always be remembered that the smaller the cluster, the less characteristic the morphology is for DCIS***(Seymour et al.,2007)***.

Morphology, the presence of punctate, rounded, oval calcifications within the cluster does not necessarily indicate benignity if there are other calcifications with more worrying morphological features, such as granular, elongated rod or branching calcifications. Rounded calcifications with centrallucency are a reliable indicator of benignity. Variations in the size, shape and density of the calcifications increase the suspicion of malignancy although such features are found in many benign

clusters. If elongated rod-shaped calcifications are present, the differential diagnosis lies between DCIS and duct ectasia***(Britton PD.,2005).***

Distribution, if a ductal distribution is present, unless there are categorical features of duct ectasia, the calcifications should be recalled as the only other common cause of a ductal distribution of calcifications is DCIS ***(Teh WL et al.,2000).***

Cluster shape, most clusters of benign calcifications are round or oval, whereas the vast majority of DCIS clusters have an irregular or V-shaped cluster shape. It is, however, not uncommon for DCIS when the cluster is small to have a round or oval cluster shape and this is particularly so in cases of low- or intermediate-grade DCIS. A multiple lobular distribution of calcifications normally indicates fibrocystic change but occasionally a multilobular distribution of calcifications can be found in intermediate- or low-grade DCIS***(Westerhof et al.,2005).***

Calcifications are categorized morphologically as to the likelihood of associated malignancy. The BI-RADS describes three groups:

-Typically benign calcifications

-Calcifications with intermediate concern of malignancy.

-Calcifications with a high probability of malignancy

(obenauer et al.,2006).