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## Abstract 8:11

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### How to find the cancer when it is still small? Calcifications.

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The diagnostic approach to malignant type calcifications on the mammogram

Calcifications on the mammogram are relatively easy to perceive, regardless of the mammographic parenchymal pattern. The main difficulty lies in differentiating the malignant type calcifications from the benign type. This poses a considerable challenge, which we cannot always overcome without interventional procedures leading to histologic diagnosis. Effective mammographic analysis requires an understanding of the underlying pathophysiologic processes leading to the various types of calcifications. A careful analysis combined with a selective use of larger bore needle biopsy will help us reach the correct diagnosis and optimize treatment planning.

The first step in analyzing the calcifications is to determine their site of origin:

I. Within the ducts: Casting type (malignant type) and secretory disease type (benign type) calcifications. Differential diagnosis is relatively easy.

II. Within the terminal ductal lobular units (TDLUs): Diff. dg is quite a challenge.

a) Crushed stone-like calcifications

b) Powdery/cotton ball-like calcifications.

III. Outside the glandular tissue (miscellaneous types): calcifications in the walls of blood vessels, oil cysts, in the skin, or in the sclerotic stroma are usually characteristic for benign processes and seldom cause differential diagnostic problems.

Each of the three groups of malignant type calcifications - the casting type, the crushed stone-like and the powdery - has its own unique characteristics from the viewpoint of histology, imaging and outcome.

The differential diagnosis continues by analyzing the shape and density of the individual calcifications. In addition to the analysis of the distribution/shape and density of the calcifications, the use of larger bore needle biopsy and preoperative histologic examination of the specimen will lead to proper diagnosis of the nature and distribution of the disease.