Breast Cancer Prediction Using Least-Squares

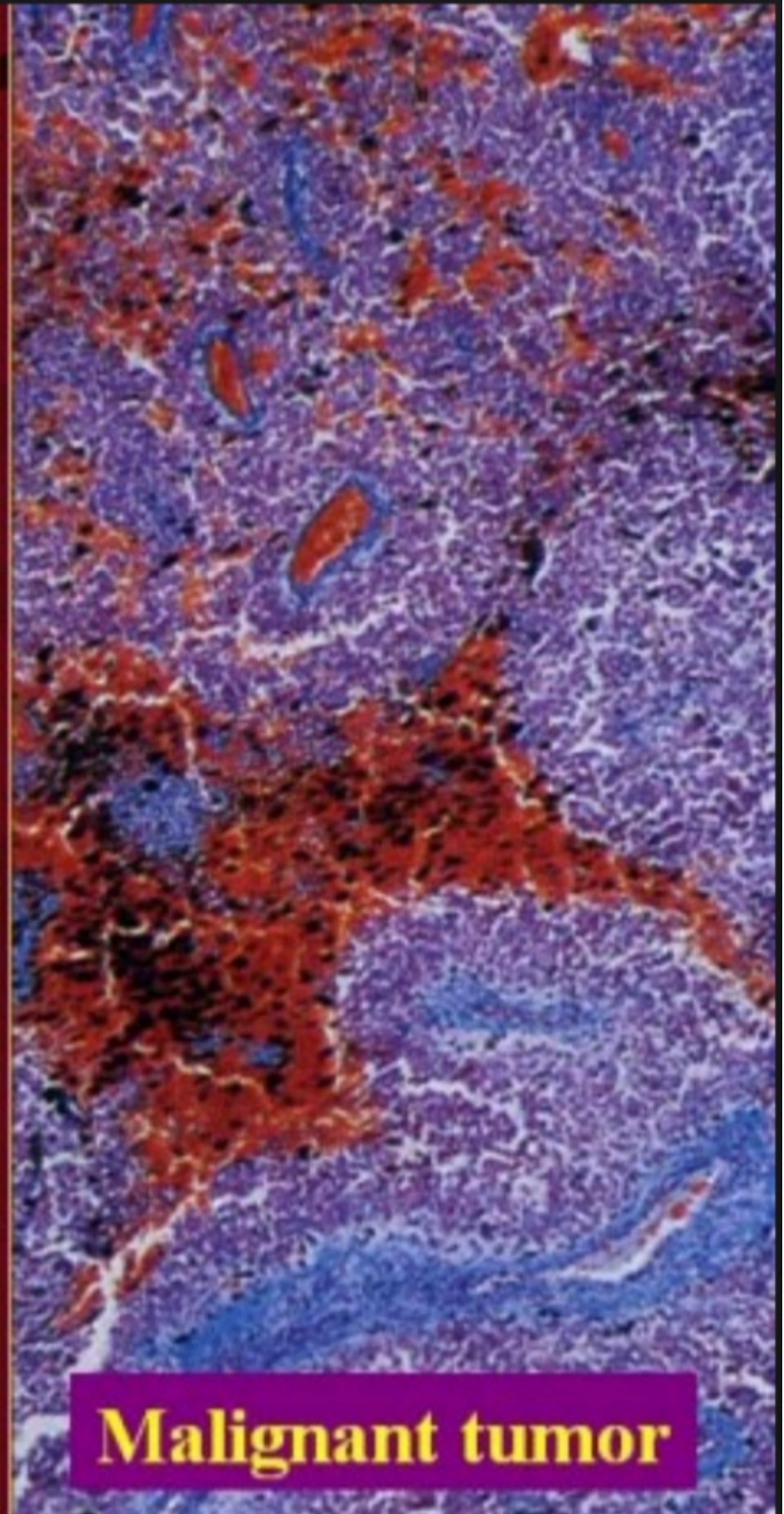For this problem, you will develop models using the least squares method to give doctors an indication of whether a tumor is malignant **M** (cancerous / deadly) or benign **B** (non-cancerous / safe). Your model will help doctors understand if a patient is at risk, which means that they can begin treatment early and have a better chance at healing the person.

A tumor is a mass of abnormal tissue. Malignant and benign tumors have different cell growth characteristics (See *Benign vs. Malignant Cells*). Some of the important tumor properties include the *radius* or the *texture* among others. The first way to understand these characteristics is through x-ray imaging and secondly through a biopsy (*examing a small sample of the tumor under microscope*).

You will be given a large data set containing hundreds of patients along with properties of their tumors. You will solve least squares problems with this data and then try to predict whether another set of patients have malignant **M** or benign **B** tumors.
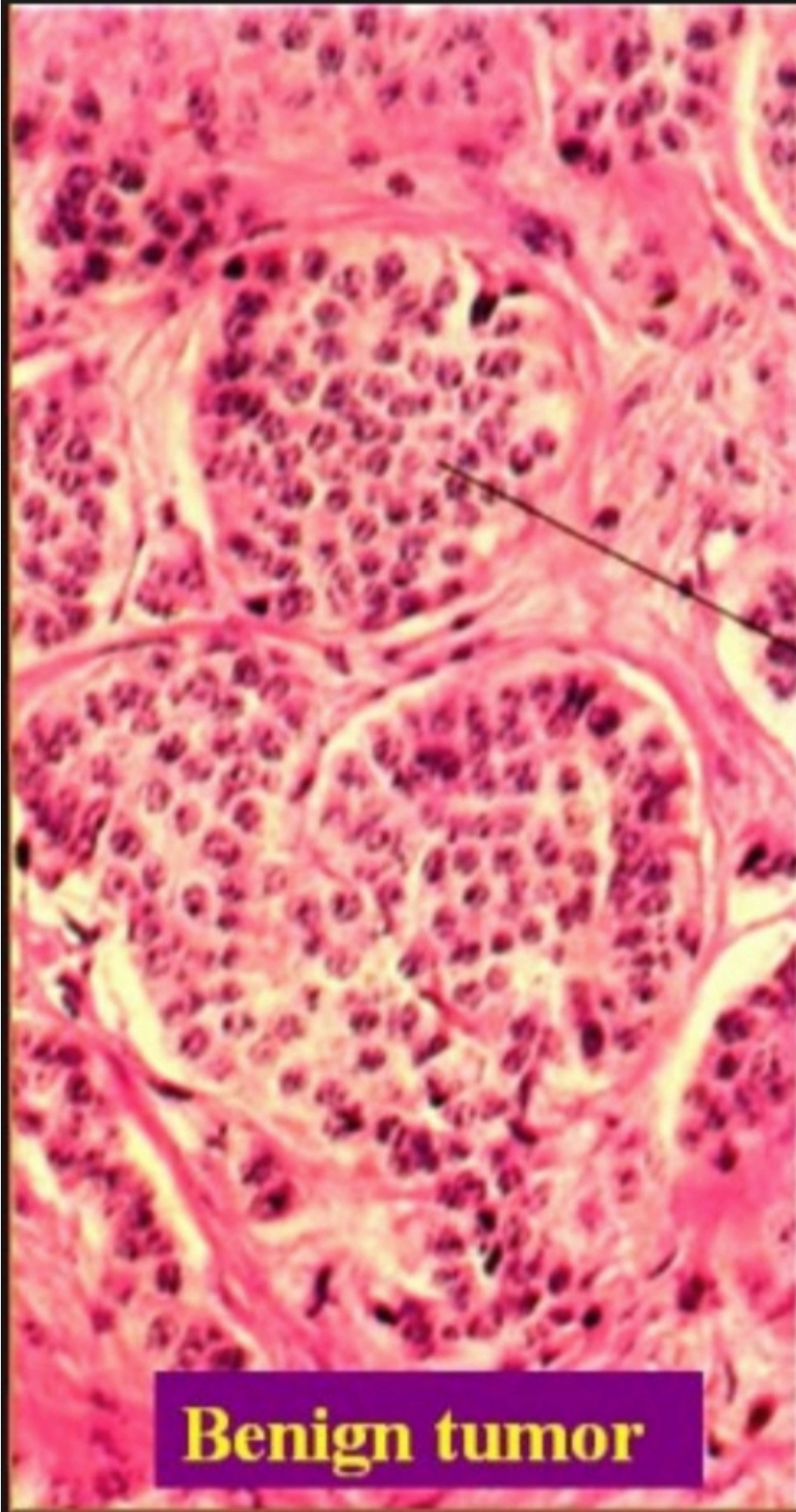
Benign tumor

Malignant tumor