

# The Diagnostic Significance of Ultrasound and Ultrasound-guided Coarse Needle Biopsy in Breast Cancer in Pregnancy

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**Abstract: Objective:** To explore the significance of ultrasound and ultrasound-guided coarse needle biopsy in the clinical diagnosis of breast cancer patients in pregnancy. **Methods:** A total of 10 patients with breast cancer in pregnancy were selected to study from October 2018 to October 2019 in our hospital, who were given preoperative ultrasound results and ultrasound-guided coarse-needle biopsy histopathology, and the results were analyzed. **Results:** All the 10 patients showed thickening of the mammary gland body, appeared to pick up disorderly situation, most of the dilated catheter, including 8 patients with solid hypoechoic mass, irregular shape, and “crab foot” edge burr. The corresponding aspect ratio value was greater than 1. The other 2 patients presented with cystic mixed masses with poor boundary definition, irregular shape, and mostly accompanied by posterior echo enhancement. **Conclusion:** Simple ultrasound diagnosis for patients with breast cancer during pregnancy has some errors, and should be used in combination with ultrasound-guided coarse needle biopsy operation. This method has a high clinical diagnosis rate and significant clinical application value, so it is worth promoting.

**Keywords:** Ultrasound and ultrasound-guided coarse needle biopsy; Breast cancer during pregnancy; Clinical diagnosis

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For breast cancer during pregnancy, it usually refers to breast cancer patients diagnosed during pregnancy or within one year after delivery. According to clinical data reports, the incidence rate of this patient accounts for 0.2%-3.8% of all breast cancer patients<sup>[1]</sup>. The incidence of breast cancer patients tends to be younger as the birth age of modern women continues to be delayed, resulting in a gradual increase in the incidence of pregnancy complicated with breast cancer. In actual development, the anatomical and physiological changes of breast cancer in pregnant women will lead to misdiagnosis of breast cancer diagnosis in pregnancy, which will adversely affect the prognosis of patients. Based on this, this study combines ultrasound examination with guided coarse needle biopsy to explore its clinical diagnostic value.

## 1 Patient data and methods

### 1.1 General information

Patients in our hospital were selected to carry out the research. The research was carried out from October 2018 to October 2019. A total of 10 patients were selected, all of whom were pregnant breast cancer patients. The youngest patient was 22 years old, the oldest 38 years old, and the corresponding average age was (31.95±3.22). Among them, 8 were first pregnancy and 2 were second pregnancy.

## 1.2 Methods

Instrument selection: Color Doppler ultrasonic diagnostic instrument, mainly MYLab90 model manufactured by Yum Brands, Italy, which is a linear array high-frequency probe, and the probe frequency is adjusted to 7.5 MHz. Meanwhile, automatic biopsy gun produced by Bader Company in the United States is applied, and the corresponding range can reach 15-22 mm, and 14 g disposable slot type puncture and cutting biopsy needle is applied<sup>[2]</sup>.

High frequency color Doppler ultrasound examination: patients were instructed to choose supine position and lift up their hands to fully expose their bilateral breasts and bilateral axilla. With the nipple as the center, the patient's breast was scanned continuously in a clockwise direction, mainly including radial scan and horizontal scan. Besides, the position, size, boundary and shape of the patient's tumor were observed to determine whether the patient had calcification problems, whether there was posterior echo attenuation, and the axillary lymph nodes of the patient were also observed<sup>[3]</sup>. When CAI e doppler was applied, the blood supply inside and around the tumor was determined, and the nature of the tumor was judged.

Ultrasound-guided puncture biopsy: to promote the full exposure of the breast punctured by the patient, and to focus on the examination of the tumor area of the patient. Starting from the tumor position of the patient, the puncture body position of the patient is selected, the puncture point and the needle insertion approach of the patient are selected and determined according to the actual situation of the patient, and on this basis, the patient is subjected to conventional skin disinfection, towel spreading, disposable probes and special aseptic operation probes are selected, the probes are sheathed, lidocaine with a dose of 2% is applied at the same time, and the puncture site is subjected to local infiltration anesthesia treatment according to ultrasonic instructions. A scalpel is used to make a small incision at the skin of the puncture point, the needle is inserted clockwise, and real-time ultrasonic guidance is carried out. The puncture needle is inserted obliquely along the long axis direction of the probe. After the puncture needle enters the edge position of the mass, the biopsy needle of the biopsy gun is excited to realize tissue cutting<sup>[4]</sup>.

According to the tumor size of the patient, 4-6 tissue strips were obtained by puncturing different regions. At the same time, formalin with a concentration of 10%

was applied, fixed, and histopathology examination was carried out. After the disinfection of the postoperative puncture site was completed, the sterile covering was applied and the bandage was applied for 24 hours<sup>[5]</sup>.

## 2 Results

### 2.1 High Frequency Color Doppler Images

All the 10 patients showed thickening of the mammary gland body, appeared to pick up disorderly situation, most of the dilated catheter, including 8 patients with solid hypoechoic mass, irregular shape, and "crab foot" edge burr. The corresponding aspect ratio value was greater than 1. The minimum diameter of the tumor was 2.0×1.8 cm, and the maximum diameter was 5.8×4.6 cm. The other 2 patients presented with cystic mixed masses with poor boundary definition, irregular shape, and mostly accompanied by posterior echo enhancement. Among them, 5 patients showed a little dotted blood flow signal inside and around the lesion, 2 patients showed abundant blood flow signals inside and around the lesion, and 2 of the 5 patients showed abundant blood flow signals that could be detected to the low resistance spectrum of the artery.

### 2.2 Ultrasound-guided Coarse Needle Biopsy

All the 10 patients were successfully punctured, and 2 of which were diagnosed as mammary gland inflammatory changes and accompanied by abscess formation after ultrasound examination. After anti-inflammatory symptomatic treatment, the lesions of the patients were not significantly changed, so it was needed to continue ultrasound-guided needle puncture biopsy. The sampling of 10 patients was satisfactory, and the pathological results showed that 9 patients were invasive ductal carcinoma and 1 patient was primary tumor of oral and oral breast cancer after coarse needle puncture guided by color ultrasound.

## 3 Discussion

The incidence of breast cancer is higher in clinic, and it is more threatening to pregnant women and fetuses. In the case of breast cancer during pregnancy, it's more common in women under the age of 40. The clinical manifestations of the patients were similar to those of non-pregnant breast cancer patients, mainly due to the occurrence of a single lump in the affected side of the breast and painless<sup>[6]</sup>. However, for breast cancer patients during pregnancy, it is usually accompanied

by inflammatory problems such as redness, swelling and pain, which will affect the increase of hormones in patients during pregnancy and lactation, resulting in physiological enlargement and obvious swelling of breast, making the breast lump of the patient difficult to be touched and detected, and the patient is already in the middle and late stages when being diagnosed<sup>[7]</sup>. According to the relevant research data, the prognosis of breast cancer patients during pregnancy is poor, and the survival rate is reduced, mostly due to the delayed diagnosis caused by the influence of pregnancy hormones and changes in physiological structure of patients, resulting in the corresponding course stages of breast cancer patients during pregnancy being later than the course of non-pregnant breast cancer. Therefore, it is particularly important to ensure the timely and effective diagnosis of patients<sup>[8]</sup>.

Ultrasonic examination is highly sensitive and specific in the diagnosis of breast cancer patients, especially for breast cancer patients during pregnancy. At the same time, the ultrasonic examination method has high safety. For breast cancer patients during pregnancy and lactation, there are special physiological changes in their breast, and the corresponding breast background structure is relatively complex, which easily leads to misdiagnosis of ultrasound<sup>[9]</sup>. However, when the hormone levels of pregnant and lactating women are changed, the breast of the patient is enlarged and hyperplasia of mammary glands bubble. When the fine needle biopsy method is applied, it is not easy to distinguish the atypical hyperplasia of tissue cells caused by hormone stimulation of the patient from the heterosexual differentiation of breast cancer<sup>[10]</sup>. In other words, coarse needle biopsy is more suitable for pathological examination. In this case, promoting the combined use of the two methods and carrying out pathological diagnosis after giving patients ultrasonic examination can improve the diagnosis efficiency of patients, ensure the accuracy of diagnosis, avoid misdiagnosis problems. Early diagnosis of breast cancer during pregnancy can promote the use of active and effective treatment methods, improve the prognosis and ensure the safety of life.

In conclusion, giving patients a simple ultrasound diagnosis, there are some errors in the diagnosis of breast cancer during pregnancy, and it needs to be combined with ultrasound-guided coarse needle biopsy. This method has a high clinical diagnosis rate and significant clinical application value, so it is Worthy of promotion.

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