confirmation was always attempted. If no confirmatory diagnosis could be achieved, FDG-PET was considered to be false-positive.

Results: Increased uptake was found in the breast in most cases, less frequently in the lung, liver, bones and mediastinal lymph nodes. Unexpected and later confirmed malignant lesions (i.e. lesions not diagnosed by conventional methods) were found in 10 patients by FDG-PET leading to a change in patient management in seven. However, four FDG-PET lesions remained unconfirmed and were thus false-positive. Lesions that appeared the most difficult to confirm were mediastinal lymph nodes and liver metastases. Overall sensitivity of FDG-PET was 100%, specificity 64%, positive predictive value 80% and negative predictive value 100%.

Conclusion: FDG-PET is a useful diagnostic method for the detection of (distant) metastatic disease and local recurrences. Especially the fact that no false-negative results were found could be helpful in clinical practice. Several additional lesions were found, which have led to a change in treatment of most of these patients. Since conventional methods revealed no additional lesions, it should be the objective of further studies whether it is useful to perform FDG-PET earlier in the diagnostic work-up.

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142   POSTER

The frequency of the appearance of breast cancer in the breast remaining after radical mastectomy

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Purpose: Breast cancer is one of the main problems of modern oncology. In spite of the possibilities of ray diagnostics breast cancer frequently is detected on late stages and then it is necessary to do a radical mastectomy. There are contradictory data on the rate of origin of malignant tumors in the remaining breast after a mastectomy. There is also different opinion to the dynamic monitoring over patients with a breast cancer following these operations.

The purpose of this exploration is the evaluation of frequency of the appearance of breast cancer in the remaining breast depending on the time passed after mastectomy and age when the tumor had been detected in the first breast, the definition tactics of examination of these patients.

Methods and materials: Results of examination of 3664 women with breast cancer had been analyzed. During 5 years following the operation 1539 female patients were being observed (40%); 6–10 years – 1026 (30%); 11–15 years – 733 (20%); over 15 years – 366 (10%). Along with clinical examination a mammography, sonography, ductography and pneumocystography were carried out.

Results: Malignant tumors were revealed in the remaining breast in 67 women (1.8%). The frequency of diseased for breast cancer depending on the time passed after mastectomy was as follows: during 5 years after operation – 34% of cases; 6–10 years – 30%; 11–15 years – 24%; over 15 years – 12%.

The influence of age, at which breast cancer was detected for the first breast, upon the rate of development of malignant tumor in the remaining breast after a radical mastectomy was as follows: under the age of 34 years – 7%; 35–44 years – 23%: 45–54 years – 46%; 55–64 years – 13%; 65 and older – 11%.

The frequency of diseased for breast cancer at the moment of revealing the first tumor before the age of 34 – 1.7%: 35–44 years – 2.0%: 45–54 years – 2.9%; 55–64 years – 0.9%; 65 and older – 0.9%.

Conclusion: The frequency of breast cancer development in the remaining breast prevails the morbidity in the population of women of the region by 32 times. Women with established diagnosis breast cancer must be under examination all their life.

Taking into account high percent of the tumors detected during the first 5 years after the mastectomy it is necessary to examine patients carefully before the operation with using of all available diagnostic methods.

For monitoring of remaining breast after a mastectomy the following tactics of using radiation diagnostic methods was recommended: in case of the diagnosis established in the first breast at the age under 34 years– mammography and sonography; 35–54 years – annual mammography; over 55 years– mammography every 2 years. Sonography, ductography and pneumocystography were recommended in special cases.

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143   POSTER

Mammographic masses in the surveillance of BRCA 1/2 mutation carriers

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Purpose: To evaluate whether breast cancers in mutation carriers present as benign looking circumscribed lesions on the mammography.

Background: The breast cancer linkage consortium hypothesized that breast cancers in BRCA 1/2 mutation carriers may escape mammographic detection, because of rapid growth and tumor expansion and may therefore mimic benign lesions.

Patients and methods: Twenty nine carriers under surveillance developed 31 first or second primary breast cancers between 1994 and 2001 at a mean age of 44.2 years. Controls were 63 women with 67 breast cancers in the same period at a mean age of 53.8 years, also under surveillance because of a life time risk for breast cancer of at least 15%.

A review of all mammographies was done by seven radiologists.

Results:

Mammogr. lesion	BRCA 1/2 carrier		Control LTR>15%		P value
	Tumor N=31	%	Tumor N=67	%	
Circumscribed mass	7	23	3	5	0.01

Conclusion: Circumscribed mammographic lesions (usually typical for a benign lesion) are found significantly more in gene mutation carriers. These lesions should be described as at least BI-RADS 0.

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144   POSTER

Clinical utility of bilateral whole-breast US in dense breasts – Is routine US examination necessary?

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Purpose: To evaluate the results of bilateral breast US examination in breasts with BI-RADS density category –3 and 4, and compare it with the results of mammographic examination.

Materials and Methods: Between November 1999 and December 2000, 1536 patients with heterogenously dense (BI-RADS density category –3) or extremely dense (BI-RADS density category –4) breasts were examined sonographically without considering asymmetrical densities in mammographies. According to the results of US and/or mammographic examination, 73 patients have undergone breast biopsy. Suggestive findings of mammography and US examinations were compared with tissue diagnoses from biopsy specimens. Sensitivity, specificity, accuracy,positive predictive value and cancer detection rate was calculated for mammography and US, separately.

Results: From 73 biopsy performed lesions, 59 were visible mammographically, and 68 were visible sonographically. Out of 16 lesions diagnosed as malignancy, 15 were seen via each modality. One malignant lesion was missed by mammography, and one by US examination. Concidering heterogenously dense and extremely dense breasts, for mammographic examinations, results were as follows: sensitivity: 94%, specificity: 97%, accuracy: 97%, positive predictive value: 25%, and cancer detection rate: 0.97%. For US examinations these results were: 94%, 96%, 96%, 22% and 0.97%, respectively.

Conclusion: Sensitivity, specificity, accuracy,positive predictive value and cancer detection rates for mammography and US were similar considering heterogenously dense and extremely dense breasts. mammography is the primary modality for breast screening. We believe that US will be useful in identifying possible missed lesions in dense mammograms and should be used as a complimentary tool in such breasts.

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145   POSTER

System delay in breast cancer patients; important defect in patient's management

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Background: Delay in diagnosis and treatment of breast cancer leads to progression of disease and is associated with high mortality.

Delay in breast cancer care can be divided into patient delay (time from symptom recognition to initial medical consultation) and system delay

(time from first medical consultation to treatment). Prolonged delay usually defined as intervals more than 12 weeks.

Objective: The aim of this study was to determine the medical delay and associated factors in the presentation of breast cancer.

Method: A total of 198 breast cancer patients were interviewed and the interval between first breast clinic visit and initial treatment was recorded.

The variables examined were age, education, marital status, family history of breast cancer, history of benign breast disease, tumor size and nodal status according to pTNM system.

Results: Median and mean of system delay was 1 and 3.44 months respectively and 30 percent of patients had system delay more than three months.

Only age less than 40 years was significantly associated with system delay (OR 2.3, 95%CI 1.26–4.47, P=0.007).

Conclusion: The findings indicated that system delay in breast cancer care is important weakness in breast cancer management and is seen in almost one third of patients, especially in young women. Therefore, educational programs for physicians and healthcare professionals are recommended.

146   POSTER
Three-dimensional MR imaging of the breast in supine position using a flexible surface coil: Value in the planning of the breast conserving surgery

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Background: MR imaging is becoming a popular modality to diagnose the breast cancer. This modality is especially excellent to evaluate the distribution of cancer therefore it is used for surgical planning before breast conserving therapy. However, it is unable to take the images of the breast in the same position with surgery because patients have to lie in prone position with dedicated breast coil which is not inexpensive equipment. We studied new MR imaging method of the breast in supine position using standard-equipped flexible surface coil.

Materials and Methods: 15 patients of the breast cancer before surgery were examined. MR imaging measurements were performed with a 1.5 Tesla MR unit by using a multi-purposed flexible surface coil. The patients were in the same position as the positioning of the breast surgery, in supine, with the arm of the diseased side raised up on the head. The flexible coil was tied around the diseased breast. Three-dimensional gradient spin echo T1 weighted sequence with fat suppression was performed to scan coronal planes of the breast before and after intravenous borus injection of Gd-DTPA at a dose of 0.2 ml/kg. The images were reconstructed to the three-dimensional view with the method of maximum intensity projection. To evaluate the value of the imaging on planning breast surgery, depictability of the breast cancer and anatomical structures around the breast were assessed.

Results: The Breast cancers could be depicted on 14 of 15 cases. On reconstructed 3-dimensional view, outer margin of the major pectoral muscle was depicted in all 15 cases. The axillary fossa in 14 cases, the axillary artery and vein in 13 cases, the dorsal latissimus muscle in 10 cases, the lateral thoracic artery in 14 cases, inner branches of the internal thoracic artery in 9 cases were depicted. No patient complained any pain nor stiffness caused by keeping her position during the MR examination.

Conclusion: MR imaging of the breast in supine position is as well able to depict cancers as the imaging in prone position with dedicated breast coil, and can take wider field of views which enables to depict anatomical structures around the breast such as muscle and vessels, in the same position with surgery. Moreover, the coil is less expensive and patients are in more comfortable position than the method in prone with dedicated breast coil. Supine-positioned MR imaging is easy and useful way to examine breast carcinoma on planning the breast conserving surgery.

147   POSTER
Opportunities of use of biochemical markers for early diagnostics of breast cancer

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Background: One of the reasons of high death rate of breast cancer patients is low detectability of disease at early stages. For tumoral pathology is characteristic noncontrollable growth, so, high activity of proliferation. Key enzymes of DNA synthesis on the "Spare" way, sharply changing activity at tumour, Thymidine kinase (TK) and Thymidine phosphorylase (TP). Key enzyme of anaerobic glycolysis – lactatedehydrogenase (LDG). Comparative study of these enzymes activity in healthy women, women with fibrocystic mastopathy (FCM) and with cancer at 1 stage, will help to reveal early changes in DNA metabolism at tumoral pathology.

Materials and methods: Blood serum of 60 healthy women, 150 patients with FCM, 25 patients with BC T1N0M0 aged 46–60 years is investigated. Also contents of cyst in women with mastopathy without and with an inflammation and also contents of cyst at BC are investigated. Activity of enzymes was defined spectrophotometrically.

Results: TP Activity in blood serum in patients with FCM is authentically reduced up to 34.8 ± 2.1 nmol/min/mg (TP in healthy women – 43.2 ± 1.4 and has the minimal value at FCM with inflammation – 27.6 ± 1.9). In contents of cyst at FCM without inflammation TP Activity – 472.8 ± 30.0 nmol/min/mg, with inflammation – 341.2 ± 18.0. Thus LDG Activity in blood serum in patients with FCM sharply increases up to 33.1 ± 3.5 nmol/min/mg (norm – 2.1 ± 0.6) and increased with severity of disease. TK Activity in patients with mastopathy did not change, at T1N0M0 increased up to 3.82 ± 0.1 nmol/min/mg (in norm – 3.14 ± 0.55). Thus TP Activity – 18.0 ± 1.2 nmol/min/mg. Even slight increase of TK on a background of decrease of TP creates conditions for intensive proliferation which can use energy of anaerobic glycolysis. Activity of LDG at BC T1N0M0 grows in 3 times – 65.8 ± 0.5 nmol/min/mg.

Conclusions: Thus, at fibrocystic mastopathy TP activity is reduced, that creates conditions for increase of DNA activity synthesis, accompanied by amplification of energetic maintenance. At initial stages of disease (T1N0M0) TK activity increases, that can be one of the reasons of activation of neoplastic transformations. Therefore, if at inspection of patients with FCM, especially accompanying the inflammation, at definition of TK, TP and LDG observes increase of TK activity and LDG on a background of decrease in TP activity is possible to assume presence of tumoral disease at his early stages.

148   POSTER
Mammary ductoscopy in human mastectomy specimens: the feasibility and limitations

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Background: With the recent advances in the development of newer generation of micro endoscopes, Mammary Ductoscopy is gaining popularity. This technique has made it possible to visualise the mammary ductal system and ductal lavage under direct vision using a submillimetre microendoscope passed through a ductal opening on the nipple's surface.

Objectives: The purpose of this study was to assess the feasibility of this procedure to successfully cannulate the mammary ducts and to assess and visualize mammary ductal lesions.

Materials & Methods: Ten mastectomy specimens were included in the study from patients undergoing mastectomy for breast cancer. The tumour bearing quadrant was massaged until nipple discharge was obtained. Lacrimal duct probe was then used to dilate the nipple orifices and proximal ducts. Subsequently, Nipplescope (*Lifeline Biotechnologies, USA*) was used for ductoscopy. Normal saline was used for irrigation through a side attachment.

Results: Out of 10 specimens mammary ductoscopy was accomplished in 8 (80%). Only 2 cases (20%) had unsuccessful cannulation. One case (aged 73 years) had nipple sclerosis and hence was impossible to cannulate. The second case had dye injected prior to surgery into the duct and hence despite repeated irrigation it was not possible to visualise the ductal system due to the dye. Ductal pathology was visualised in 7 (87.5%) out of the 8 cases. It was possible to navigate the ductoscope up to a depth of 10 cm (range 0–10 cm).

Conclusions: Mammary Ductoscopy is technically feasible in most patients and has a potential in breast cancer detection.

149   POSTER
Additional diagnostic analysis for a palpable breast lesion: triple test and or histological core needle biopsy

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Purpose: Next to physical examination of the breasts, the evaluation of a palpable breast lesion can be extended by imaging, fine needle aspiration cytology (triple test) and/or a histological core needle biopsy. Purpose of this study was to evaluate the diagnostic performance of these additional diagnostic tests.

Materials and methods: During 10 months 2020 consecutive patients referred for mammography were prospectively followed during their diagnostic assessment. Suspected palpable lesions underwent a