Diagnosis and Treatment of Non-Palpable Legions of the Breast

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Dr. Jos Aristodemo Pinotti: "My presentation is related to the kind of strategy that we have been using during the last twelve years in doing histological and cytological monitoring during surgery with the objective to reduce local recurrence in conservative treatment of breast cancer. As you know, in the last forty years one of the most important achievements of treating breast cancer was conservative surgery, and there was and there is a very important enthusiasm with conservative surgery. Nevertheless, we learned with our experience in this last decade that one of the important problems of conservative breast cancer is local recurrence. We have 7, 8, or 9 times more local recurrence in conservative treatment than in radical treatment. In the beginning, even Veronesi who introduced this conservative treatment in an organized way, believed that local recurrence had no relation with the prognosis of breast cancer but immediately after not only Veronesi but a lot of other authors demonstrated that local recurrence is a very important marker of metastasis and metastasis is a very important marker of prognosis. So one of the most important concerns of the mastologists all around the world is with local recurrence in conservative treatment of breast cancer. As you can see, different authors have different frequency of local recurrence but all of them have high frequencies of breast cancer recurrence. Since the beginning when we have involving margins, the incidence of recurrence is larger than the incidence of recurrence when the margins are free but this is an observation after the surgery not during the surgery. This is the statistics, I mention Veronesi demonstrated that the relative risk of metastasis is four times more when he has a local recurrence, as Chowdhury three times more, and we demonstrated in our case three times more as well so there is no doubt that local recurrence is a very important marker for prognosis.

Some authors and some statistics demonstrated that local recurrence occurs less in radical mastectomy, a little more in quadrantectomy, a little more in tumorectomy, and even more in quadrantectomy without irradiation. This paper of Holland’s is a very important paper because he demonstrated not exactly dealing with local recurrence but with residual cancer focus in the breast that when you have margins of 1 cm you have more than 50%, 2 cm more than 40%, 3 or 4 cm 10%, but the most important conclusion of this paper is that even when you take almost all the breast, and all of you who are mastologists know when we take out a tumor with 4 cm of margins in a medium size breast, you almost take all the breast out. Even in that case, there is the presence of residual focus. So the solution is not only a question of extension of the margins, our conclusion in that moment was that we should try to individualize the case during the surgery, and that’s our proposition. What do we do? We do the quadrantectomy and during the quadrantectomy if we have a known non-palpable lesion, we should be sure that the known non-palpable lesion was taken out using radiology and other forms that you already know. During the quadrantectomy, the pathologist is with us in the surgical theater and we put some markers in the different faces of the surgical specimen in order to be sure, together with the pathologist, who would identify the margins correctly. The pathologists do the scraping of the surgical margins in order to have a cytological examination. The cytological examination guides the histological examination, immediately after the margins are inked so they will be recognized in the histological frozen examination. The specimen is lanced and the histological examination is done in different parts of the surgical margins. We give a lot of importance to the margin that looks to the areola because of the epidermotropic characteristic of the cancer progression, and it’s possible to detect during the examination if the tumor is near the margin because the margins are inked. Immediately after, the pathologist informs the surgeon about the margins and we decide together if
the surgery was enough, if we need to amplify the surgery, or if we need to go to a mastectomy. There is no waste of time because this procedure takes more or less half an hour and during that half an hour we do the axillectomy. When we finish the axillectomy, the pathologist arrives with the results of the margin with frozen section and cytology. That's a margin with cancer, and that's a margin that’s free. We used to say that a margin is free when between the cancer and the margin there are at least two lobular units free of disease; it's not a question of centimeters. We also take into consideration to follow the study of margins. Some clinical factors related to recurrence - we know that young women are more prone to recurrence, when we have microcalcification out of the limits of the tumor, when we have tumors with no defined limits, and also large tumors - all those clinical factors are related to a greater risk of recurrence.

Some facts related to the tumors - the lobule is infiltrated, and it's a very difficult tumor to define the margins. The histological grade and the nuclei grade also are related to recurrence and some extra tumor variables like lymphatic embolization, positivity for nodules, and intraductal extinction. That's additional difficulty with the lobule being infiltrated and additional difficulty for the pathologist to define the margins. That was the pilot project we did ten years ago, we operated personally on 58 cases. The pathologist, Dr Filomena de Carvalho, was a woman pathologist who did the frozen section histological examinations and the monitoring herself. We were obliged to amplify the surgery in 44% of the cases, and we needed to do a mastectomy in 8% of the cases so we were very impressed because we used exactly the same technique and the same limits for quadrantectomy that we have been using for the last twenty years. Using the strategy of margins, we were obliged in 50% of the cases to do amplification or mastectomies. Using this pilot experience, we organized a trial in which during the surgery we took into consideration the clinical tumoral and astra extra-tumoral factors and we did surgical margins together with the pathologists. We decided during the surgery for the classic quadrantectomy, amplifying the quadrantectomy 1, 2, or 3 times - whatever is necessary, or mastectomy.

That's a decision made during the surgical procedure, and we compared this strategy in terms of prognosis of recurrence with a group of cases in which we didn't do this kind of procedure. Our study group and our control group are more or less similar, we have 112 and 149 cases a year, all of them had radiotherapy, all of them had adjuvant chemotherapy, the age is similar and the follow-up. We have a greater follow-up in this control group than in this group but it's possible statistically to control this difference. In terms of amplification of the surgery, we had more or less the same results with the study group. In 112 cases we were obliged to amplify in a little bit more than 30%, and we did a mastectomy in 6% of the cases, and so only in 60% of the cases we did the classic quadrantectomy, and we were obliged to amplifications in 40% of the cases. The results are very impressive, in the study group we had just 1 local recurrence with 0.8% of local recurrence, and in the control group we had 11 local recurrences with 7.3% of local recurrence, for sure the difference was statistically significant. Then we followed those patients during almost the last ten years, and we had important differences in total survival, which was almost significant.

I know probably in the next evaluation this result will be significant because it is in the limit of significance but a total of the disease free survival is already significant. I will show you some steps of this procedure. One very important point is that when we are almost finishing the quadrantectomy, we ask for the pathologist to stay with us, and we put some markers in the different margins of the quadrantectomy. That's a very important margin, the margin that looks to the areola. We use sutures of different sizes to identify but the pathologist is with us and he is observing and asking us to mark one side or other side more. Generally two or three sutures are enough. During that time, the pathologist is near and is doing drawings and taking notes of this localization of the sutures in order to have the geographic orientation. Immediately after, we take out the surgical specimen in the presence of the pathologist. It's a little tumor of less than 5 mm and the pathologist observes the surgical specimen, and scrapes the margins to do cytology. Sometimes the cytology is positive, and sometimes it's negative. Immediately after, the pathologist inked the margins with different colors in order to have the margins defined. He slices the surgical specimen, localized the tumor, takes out some histological, and measures the tumor. As you see it's a very complete frozen section and cytological and microscopic examination during the surgery. That's a frozen section of some area near the tumor. It's observed by the pathologist who asks for amplification, and we are doing the amplification at that moment of a margin. We're marking the margin, taking out a margin, and slicing the margin. That's an intraductal extension of a tumor, a normal tissue that permits us to finish the surgery.

Our conclusion - cytohistological transoperative monitoring permits a more secure conservative surgery, oriented with precision, the amplification at the same surgical time reduce significantly, as
you could see, the risks of recurrence and interferes favorably with the prognosis. In our opinion, it's a simple matter that could be reproduced by integration of the gynecologist, the surgeon, and the pathologist. We think it's absolutely possible to do that. In different hospitals, in my country, we are doing that with simplicity and with very good results in terms of recurrence and prognosis. Thank you very much.

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