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Position Paper

No more axillary dissection in patients with ductal intraepithelial neoplasia (DIN)

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ABSTRACT

Although it has been shown that axillary dissection (AD) is unnecessary and without a rational basis in patients with pure ductal intraepithelial neoplasia (DIN), it is evident from the literature that AD (i.e., in the USA and in the UK) has been still recently performed. Furthermore sentinel lymph node biopsy (SLNB) is not usually required in all cases of DIN, but may be indicated in certain specific cases. Even if the SLNB is positive, AD should not be performed immediately but only in cases where an invasive component is found on definitive pathological examination of the DIN lesions.

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What happens inside the axilla of DIN patients? Before the sentinel lymph node biopsy (SLNB) era, mastectomy and axillary dissection (AD) were the standard treatment for these patients. With this procedure the status of the axillary lymph nodes was reported as metastatic in 1.4% (in 1,621 patients)¹ and in 3.6% (in 10,946 patients with DIN, from the National Cancer Database review, undergoing axillary dissection between 1985 and 1991).² On the basis of these low percentages, there is a general agreement that AD is not indicated as the first treatment in DIN patients since it is considered an unnecessary overtreatment. This is in theory. In practice, two recent reports (the SEER Data in the United States America³ and the Sloane Project in the United Kingdom⁴) showed a continuous and excessive utilisation of AD in women with DIN. In fact, when the treatment employed was breast-conserving surgery, AD was carried out in 67% of cases between 1998 and 2002 in the USA³, and in 8% of cases in the UK⁴; how-

ever, when mastectomies were performed, AD was carried out in 87% of the cases in the USA³ and in 73% of the cases in the UK.⁴ Although there are several caveats to these observations, the issue presented by the SEER study is worthy of serious consideration.⁵ In the light of this analysis axillary dissection in DIN patients is a clear overtreatment without any rational justification. Therefore, the first conclusion to be drawn, is that axillary dissection should no longer be performed in practice as a first indication of treatment in patients with pure DIN.

But not only is AD not necessary, neither should SLNB always be required. SLNB is a significantly less morbid procedure than AD which is widely used and accepted for infiltrating breast carcinoma⁶, but is still controversial in DIN patients. In fact, for some authors it is generally not indicated⁷; for others, SLNB should always be carried out^{8,9}; and for others still, it should be performed only in certain

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specific cases.^{10,11} Also the analysis of the findings of the B-17 and B-24 NSABP trials (related to radiation therapy and to tamoxifen in DIN patients, respectively) does not support the routine use of SLNB in patients with localised DIN treated with BCS.¹² The issue is to identify a 'high risk' DIN subgroup of candidates on whom to perform SLNB simultaneously with breast surgery. The indications in the literature are quite similar. Four cancer centres agree that SLNB should be conducted (a) always when mastectomy is performed^{11,13–15}; (b) with large lesions (masses or micro-calcifications) and G3 tumours^{11,12} and (c) in cases in which the pathologist cannot rule out microinvasion.¹² Amongst these cases, are those patients with a preliminary pathological diagnosis of DIN at the core or mammotome biopsy who have an invasive ductal carcinoma at the final pathological diagnosis after surgery. Generally, this upstaging represents about 16–20% of these cases^{16–19}, with variations from 11% to 13%^{16,20} (in cases of either T1 or G1 lesions) to 36–45%²⁰ (in cases of extended or G3 lesions). This is why, in cases of DIN diagnosis made after a core or mammotome biopsy, SLNB should be performed. According to these indications of the literature, the second conclusion to be drawn is that SLNB is not always indicated in DIN patients, but only in some particular cases.

The final issue is what to do if the SLNB is positive in DIN patients? In these cases, the standard management worldwide is to perform complete AD. This was in fact performed in the few cases with DIN and positive SLNB published in the literature: in the USA, 5 cases at the Lee Moffitt Cancer Center⁸; 9 at the MD Anderson, Houston¹³; 3 at Harvard Medical School¹⁴; 7 at the Massachusetts General Hospital²¹ and 25 at other four USA cancer Centres.²² In Europe, 5 cases at the Bergonie Institute Cancer Center Bordeaux, France²³; 11 at the IEO in Milan¹⁵ and 3 at the University Central Hospital in Helsinki²⁴, making a total of 68 cases. In all cases but one (67/68, 98.5%) all the non-SLNs were negative and the SLN already biopsied was the only positive LN. On the basis of these experiences in Europe and in the USA, the third conclusion to be drawn is that in cases of DIN patients with a positive SLNB, AD could be avoided. Questions remain unanswered regarding the significance of isolated tumour cells or micrometastases in the lymph nodes as well as the role SLNB plays in DIN with microinvasion.²⁵ To summarise, in the light of the three conclusions presented above, we can propose that in cases of a diagnosis of DIN: (a) one should never perform AD; (b) only perform SLNB in some particular cases; (c) in cases of positive SLNB, not to perform AD immediately but only in those cases that present mammary invasion on final pathologic evaluation.

Conflict of interest statement

None declared.

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