About Dynamic Angiothermography

Dynamic angiothermography, or DATG, was developed about 30 years ago on the basis of Prof. Jean Tricoire's work at the University of Paris. A non-invasive, entirely painless approach that can be applied to women of all ages, DATG can be repeated at will without any chemical or radiological risk whatsoever to patients. Indeed, tests run under the supervision of agencies certified by Italy's Public Health Ministry have shown that DATG is a risk-free diagnostic technique. Not to mention the fact that it is simple to operate and inexpensive. Perhaps its most salient feature is that early diagnosis can be performed at any age with a highly significant prevention rating.

Unlike the obsolete 'contact thermography', DATG does not use quantitative measurements of emitted heat as diagnostic criteria. Rather, it is based on qualitative interpretations of the breast's blood-flow lines, a feature that is making DATG increasingly more valuable both clinically and scientifically. DATG it is not the “old contact thermography”.

If to this we add the growing interest of the medical and scientific community in tumour neo-angiogenesis, the fact that DATG has proven it can localise pre-cancerous and pre-invasive lesions of breast cancer becomes all the more important. Indeed, recent studies have shown that the blood supply needed for tumour onset is always accompanied by this type of lesion in the initial stage of invasiveness.

While DATG is fully comparable to the familiar diagnostic techniques of mammography and ultra-sound, it can detect at a notably early age even minimal lesions in cases of tumour pre-invasiveness like atypias and in situ carcinomas. DATG, by its very nature, is thus convergent, not in competition, with these other techniques.

A DATG check-up is based on the semeiotic reading of the images that appear when its liquid-crystal plate is placed on the breast. These images are read and recorded so that they can also be used in a valid screening programme. The main developer of this technique was Prof. G. C. Montruccoli since 1975, with more than 6,900 patient, with a 25-year (10-year average) follow-up. We can call this new diagnostic technique : “Montruccoli Method”

The semeiotics of the images have been verified over time. the fact that they are reproducible has brought to the fore three notably important clinical characteristics:

- every woman has her own individual pattern (even homozygote twins have individual patterns that, while similar, are not identical)
every pattern is constant even after more than 20 years when no pathology is present

no pattern depends on lesion size (even in situ lobular cancer can show a blood-flow line over 15 cm. long).

Nearly 7,000 patients have participated in our DATG studies and, when age permitted, in parallel control with mammography and ultra-sound.

While it is not yet possible to assess with scientific objectivity the full value of the technique's sensitivity and specificity, prospective studies are now under way in this connection.

We should like to cite in closing a particular instance of diagnostic feedback: Lobular carcinomas have been diagnosed by DATG at a three times higher rate than ductal, in contrast to the reports in literature. Note, too, that the average age at diagnosis is 40.

**DATG was developed by:**

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Results

Since 1975, more than 6,900 patient have undergone DATG examinations as part of our clinical practice, with a 25-year (10-year average) follow-up. Each visit was recorded and stored in an archive containing more than 200,000 DATG slides; mammography and ultra-sound records are also available in many cases. The results reported below refer to the period 1975-2001 for 6,550 patients and 1,027 biopsies.

<table>
<thead>
<tr>
<th>Histological diagnosis</th>
<th>No.</th>
<th>%</th>
<th>% group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Benign</td>
<td>143</td>
<td>13.90</td>
<td></td>
</tr>
<tr>
<td>2. Mastitis and/or ectasia</td>
<td>180</td>
<td>17.50</td>
<td>31.40</td>
</tr>
<tr>
<td>3. Simple ductal hyperplasia</td>
<td>169</td>
<td>16.45</td>
<td></td>
</tr>
<tr>
<td>4. Florid ductal hyperplasia</td>
<td>235</td>
<td>22.88</td>
<td>39.33</td>
</tr>
<tr>
<td>5. Papillomatosis</td>
<td>46</td>
<td>4.47</td>
<td>4.47</td>
</tr>
<tr>
<td>6. Atypical duct hyperplasia</td>
<td>7</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>7. Atypical lobular hyperplasia</td>
<td>23</td>
<td>2.23</td>
<td>4.20</td>
</tr>
<tr>
<td>8. Mixed atypical hyperplasia</td>
<td>13</td>
<td>1.26</td>
<td></td>
</tr>
<tr>
<td>9. Ductal carcinoma in situ</td>
<td>15</td>
<td>1.46</td>
<td></td>
</tr>
<tr>
<td>10. Lobular carcinoma in situ</td>
<td>28</td>
<td>2.72</td>
<td>5.56</td>
</tr>
<tr>
<td>11. Mixed carcinoma in situ</td>
<td>15</td>
<td>1.46</td>
<td></td>
</tr>
<tr>
<td>12. Ductal microinvasive cancer</td>
<td>2</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>13. Lobular microinvasive cancer</td>
<td>5</td>
<td>0.48</td>
<td>0.90</td>
</tr>
<tr>
<td>14. Mixed microinvasive cancer</td>
<td>2</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>15. Ductal invasive carcinoma</td>
<td>123</td>
<td>11.97</td>
<td></td>
</tr>
<tr>
<td>16. Lobular invasive carcinoma</td>
<td>15</td>
<td>1.46</td>
<td>13.83</td>
</tr>
<tr>
<td>17. Mixed invasive carcinoma</td>
<td>4</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td>Malignant phyllodes</td>
<td>2</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,027</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Before 50 years  After 50 years

- Preinvasive (in situ)  9.3%  6.8%
- Invasive              19.5%  22.5%
Note that the incidence of epithelial lesions, including florid hyperplasia, runs to 70%. Another new finding is the high incidence, i.e. more than double, of lobular with respect to ductal lesions.

Note, too, that the pre-invasive rate before the age of 50 is 10% and that the rate of invasive cancers before the age of 50 is almost as high as that after 50, i.e. 19.5% versus 22.5%.

**COLLABORATIVE GROUPS IN DATG**

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Italy's national “Istituto Superiore di Sanità” has approved and introduced DATG in a prospective study for the prevention of breast cancer in carriers of the cancer-correlated genes BRCA1 and BRCA2.
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DATG Functional Unit

The workstation