The birth of the breast unit: a Florentine tale

Peter McIntyre

The story of how breast care in Europe moved from one-size-fits-all mutilating mastectomy towards a model of care tailored to the individual, stressing breast conservation and delivered by multidisciplinary breast teams is one that workers in other areas of cancer would love to emulate. Florence's **Luigi Cataliotti** saw it all, and played a key role in much of it.

For a surgeon who has campaigned tirelessly for higher standards of breast cancer care across Europe, Luigi Cataliotti seems strangely determined to emphasise the simplicity of breast surgery. "Breast cancer surgery is easy and the sequelae after surgery are very few. You can operate on a breast cancer patient and the next day she can go home, and you are free to plan your life."

Cataliotti runs a department of 300 beds, 600 staff and 70 surgeons at the Careggi Hospital in Florence, Italy. He has specialised in breast surgery since the 1970s, and today he is one of the most influential voices guiding surgeons in Europe towards a breast conserving, minimalist approach. So he should know…

But then he starts to explain the intricacies of a skin-reducing nipple-sparing mastectomy, an operation to remove all the breast tissue that might harbour cancer cells, while at the same time preserving the vascular system to guarantee the blood supply to the areola nipple complex. Does this not confound his 'breast surgery is simple' mantra?

"Absolutely", he replies cheerfully. "Believe me when I say that breast surgery is easy. But this is the truth if I am talking with experts. If I compare this easy way to treat breast cancer with what I sometimes observe from general surgeons, you can see bad things done without any sense. If you look at a wrong scar in a breast, a permanent lesion could have been avoided with attention to the right principles, and through discussion before the operation with the patient and other surgeons. It is easy, but some people do not respect even these very simple principles."

What Cataliotti is saying is that the complexities of breast treatment are less to do with surgical technique, and more to do with understanding breast cancer, working closely with other disciplines and applying the lessons from 30 years of experience. In Cataliotti's world, the surgeon is a team player, not a prima donna.

Working closely with Umberto Veronesi from Milan and others, Cataliotti has helped to spread the gospel of minimalist surgery throughout Italy and Europe. In doing so, he has had to confront some deeply entrenched attitudes.

The role of Veronesi and his team at the National Cancer Institute in Milan in pioneering breast conservation is well known. However, work in Milan went alongside the development of breast screening expertise in Florence.

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Florence already had a reputation as a leader in Pap screening for cervical cancer in the early 1970s. It seemed logical to add breast screening using mammography. And so Florence became the first city in Europe to introduce a screening programme, using mobile units to offer mammography to all women aged from 40 to 70. Meticulous record keeping of the results of screening, the action taken and the outcomes for each action made this a journey of discovery.

An early breast team

Luigi Cataliotti came to surgery by birth, but to breast surgery by chance. His father headed a department of surgery, and Luigi remembers entering an operating theatre as a young child and his father coming home smelling of ether. He began his own career as a general surgeon in Florence, specialising at times in urology and later in general surgery and emergency surgery. He was appointed professor of surgery and head of the department in 1992.

In 1975, Cataliotti was attached to the fledgling breast team, spending nine hours a week in the clinical centre, often in multidisciplinary meetings. "We were a very strong group of people aged from 30 to 45 years old, epidemiologists, radiologists, radiotherapists, pathologists and surgeons. We became close friends and had great confidence in each other.

"At that time, having a multidisciplinary meeting

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was not very common, at least in my country. Working together was a new way to work. We were full of enthusiasm, verifying everything. For example, at that time, a general surgeon used to excise a breast cyst. We started with fine-needle aspiration, with pneumocystography and with cytology, and we put together groups of patients, showing what is important and what is not. We showed for example that cytology could be avoided if the liquid is clear when we evacuate a cyst. In pneumocystography we showed the same. We went step by step, modifying our behaviour according to the evidence."

At the same time, the Milan team was demonstrating that quadrantectomy was as effective as mastectomy in localised cancers, and pioneering lumpectomy. The growing friendship between the Milan and Florence groups was mutually beneficial.

"Veronesi decided to create an Italian Task Force for Breast Cancer, and we were fully involved. About half were from Milan and half were from Florence. Then he created the Italian School for Senology and we organised a full-immersion course for doctors interested in breast cancer. Cataliotti recalls the early courses for the school by Lake D'Orta as one of the great experiences of his life. Veronesi, Bruno Salvadori and Cataliotti taught the surgical component of these multidisciplinary courses.

"I had to face 40 or 50 students, all experienced surgeons, and talk to them for from 8 am to 4 pm about my way of treating a benign lesion or a malignant lesion, or how I performed a mastectomy or conservative treatment. You had to scrape your brain for all the things that you knew. Then Umberto would come to give his lecture and, without any previous agreement, we were perfectly complementary.

"At that time, believe me, most continuing education courses in my country were organised mainly for the teachers. If you wanted to please a colleague, you would invite him to go to a beautiful location to give a lecture to 20 students. The courses in Orta, by contrast, were full immersion, with few teachers and lots of discussion with the audience, from which both sides learned a lot.

As part of the multidisciplinary Task Force, Cataliotti toured the country, explaining the guidelines for breast conservation from Milan and Florence. While some younger surgeons were enthusiastic at the prospect of avoiding mutilating surgery, a lot of the old guard were opposed.

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With his wife, Daniela

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treatment for breast cancer, and you can do this absolutely alone. For conservative treatment, the surgeon had to learn the importance of multidisciplinary work with the radiologist to read a mammogram, with the pathologist about the margin to leave and with the radiotherapist for treatment after surgery. This was not well accepted by the surgeons of that time."

Later, Cataliotti started attending international conferences. There he found that it was often the person with the best English, rather than the best clinician, who played the leading role. At the age of 40, he himself had to take English classes from 9 pm to 11 pm after a day's work, so he could take part fully in international discussions.

"This is something we and some other European countries have to face. Our own culture is important. But we missed the train in my opinion, because we should have studied English from primary school, as happens in the North of Europe."

The birth of the breast unit

Cataliotti has served on the board of the European Society of Surgical Oncology since 1992, and was its president in 2004–2005. He was also involved in the creation of the European Society of Mastology, EUSOMA, bringing together health professionals dedicated to breast cancer.

He was the local organiser of ECCO 6, in Florence, 1991. This role was subsequently assigned to the Federation of European Cancer Societies (FECS), and Cataliotti's involvement continued through his role on scientific committees of later conferences.

During these years, the Breast Cancer Group of the European Organisation for Research and Treatment of Cancer (EORTC) was organising a biennial conference on breast cancer of growing size and prestige. In 1996, the Bordeaux conference attracted 800 professionals from different disciplines.

Martine Piccart (who chaired the EORTC Breast Cancer Group), Veronesi, Alberto Costa (director of the European School of Oncology), Gloria Freilich (president of the European Breast Cancer Coalition Europa Donna) and Cataliotti decided to expand the conference to bring together the worlds of clinical research (EORTC), clinical care (EUSOMA) and patients (Europa Donna). Cataliotti organised the first European Breast Cancer Conference in Florence in 1998. "Bordeaux had attracted 800 people, but Florence is Florence, so I thought we would get more, possibly 1,200. In fact, we had 3,000 experts from 74 countries and the atmosphere was unbelievable. The last day – it was a Saturday morning – there were 800 people in one room voting on a resolution setting the aims for the next two years.

The 'Florence statement' had a number of aims, including to ensure that "all women have access to fully equipped multidisciplinary and multi-professional breast clinics based on populations of around 250,000".

Lobbying by Europa Donna resulted in a European Parliament resolution in support of breast units, and later, in 2006, another resolution saying that every country in Europe should achieve this by 2016.

In 1998, Cataliotti had just become President of EUSOMA, which convened a workshop of experts from different disciplines, chaired by British surgeon Roger Blamey. They drew up a 'minimum requirement' list to become a breast unit, and published it in the *European Journal of Cancer* in 2000. Next came guidelines for the accreditation of breast units, and then a third paper detailing the training that breast experts in each discipline should undergo.

"If you put all this together, you realise that we have indicated to the European community what the patients expect from the doctors. These units have to be recognisable by the patients – not just called a breast unit – and they provide a guarantee for the patients to be treated and followed up in the right way."

EUSOMA has developed a voluntary accreditation process based on its guidelines with the aim of increasing the establishment of high-quality specialist breast services across Europe. Cataliotti hopes that this process will be recognised by the European Commission and that EUSOMA will go on working to

satisfy requests for accreditation from European units.

Although Cataliotti welcomes the development of national cancer plans, he says that Europe-wide standards are essential. "Europe has, in my opinion, to say that if you want to organise something in your country, you have to follow these rules. We cannot say to a woman living in Poland that units in Germany are completely different to theirs or to units in Spain."

Despite the momentum in improving the detection and treatment of cancer in Europe, a number of unresolved controversies complicate the organisation of expertise.

What does it mean to be an 'oncological surgeon', with implied expertise in a number of different cancers, in an era of single-organ specialties? Although Cataliotti believes that breast surgeons must specialise and have a high annual caseload, he is also convinced of the value of preserving the European Society of Surgical Oncology (ESSO) and the concept of cancer surgery, especially as more than 60% of cancers are treated by surgery alone.

"Surgeons interested in different organs have to have a common background of knowledge. Surgical oncologists must have a knowledge of the basic biology of cancer, including its etiology and epidemiology, the natural history of malignant diseases, cancer biology as well as tumour immunology. Besides this, the surgeon must be up to speed and experienced in surgical techniques and modern technology. Can you imagine a surgeon opening an abdomen to treat a colon cancer, without having the capacity to treat a liver metastasis or a gastric cancer? This flow of knowledge is terribly important." On the other hand, some level of organ specialism is required. "It would be unthinkable that an expert in endocrine surgery would be able to tackle problems related to lower GI or pelvic malignancies."

A related controversy is the future of FECS, now that the medical oncologists have pulled out and are opening up their organisation, ESMO, to other disciplines. Cataliotti, who is on the board of FECS, feels ESMO's decision is related more to financial issues than hopes of turning ESMO into a true multidisciplinary society. He hopes and believes that FECS, reshaped as the European CanCer Organisation, ECCO, will survive.

"To uphold the right of patients to the best possible treatment, we have to go on in a real multidisciplinary way, promoting interaction between the European organisations involved in research, treatment and care. This is why I am fully convinced and believe that ECCO is the future, an organisation in which discipline societies and organ-related societies will work together. It is absolutely impossible for specialists in other disciplines to work under the umbrella of medical oncology without losing their identity."

The mammography debate

The major scientific controversy is over the risks and benefits of breast screening by mammography.

In 2001, a Cochrane review of mammographic screening cast doubt on whether screening leads to an overall reduction in mortality and reported that the number of mastectomies increased by around 20% where screening programmes had been introduced.

In 2002, the Florence breast screening team, of which Cataliotti is a part, wrote to the *British Medical Journal* challenging these findings, saying that the Florence team delivered a declining rate of radical surgery and a rising rate of breast conserving surgery.

A series of sharp exchanges ensued, in one of which, Michael Baum, emeritus professor of surgery at University College, London, went so far as to suggest that in the Birth of Venus by Botticelli – one of the most famous paintings of the Florentine school, now hanging in the Uffizi gallery – Venus is covering her breast because she is "hiding the scar of an unnecessary operation".

Cataliotti acknowledges there probably is overdiagnosis, but says that the real problem, overtreatment, can be largely avoided with better training. For example, he says that many surgeons perform an unnecessary axillary dissection when they have discovered a ductal carcinoma in situ (DCIS), which cannot have spread to the nodes.

The surgeon's approach is critical because women

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are so heavily influenced by it. Cataliotti cites research from Oslo which suggests that 86% of women opt for breast conserving therapy if advised this way by their surgeon, but only 66% do so if the surgeon makes no such recommendation.

Cataliotti also says that mammography is essential to discover pre-clinical breast cancers. "There are countries in Europe in which the mean size of a cancer is more than 2 cm. If we start destroying the concept of the importance of early diagnosis we will create problems in those countries.

"If you diagnose a lobular or ductal intraepithelial neoplasm we don't know exactly what will happen if we leave that lesion in the breast. Very often we suggest a surgical procedure which may cause psychological distress and permanent consequences for the patient. But together with these lesions, which are a small percentage, we have real early diagnosis of a lot of lesions, which surely can be dangerous for the patient.

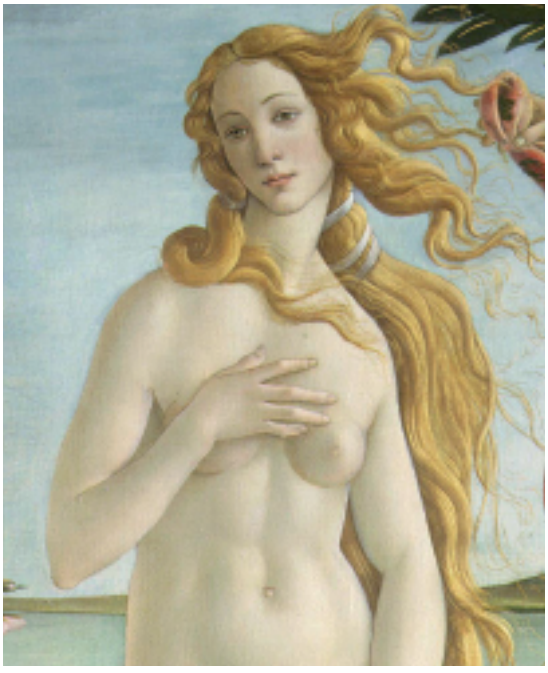
"In my opinion, considering the two aspects, I think it is better to have a screening programme to increase the possibility of diagnosing this lesion in a less invasive way and that it is better to have it than not to have it.

Now aged 66, Cataliotti expects to continue as head of surgery in Florence for four or five years. This year he stands down from the board of FECS and as President of EUSOMA and is looking forward to spending more time with his wife, Daniela, and with his grandchildren. However, he hopes to continue to promote standards of care around Europe.

"I have had the privilege of more than 15 years breathing the atmosphere in European multidisciplinary groups of people and I know that we can do a lot working together." Breast surgery may be straightforward but it is clear that understanding the right way to work and helping women to make a good decision in each case can be highly complex. When Luigi Cataliotti received the 2003 Award from ESSO, he put it like this:

"The surgeon should never forget that the correct treatment nowadays is the result of the correct blending of the surgical, radiotherapeutical and pharmacological techniques that are available. This obviously means that the surgeon is no longer alone when faced with the tumour. However, this demands great knowledge of the problems and the ability to face different situations and to evaluate each single situation in its entirety.

"Practically, one can either be a maximalist, doing the utmost independently of the histology and biology of the tumour, carrying out as large an excision as possible, or a minimalist, guided by global evaluation of the situation and therefore highly personalised. Certainly the former is easier, more traditional and more easily repeatable in terms of respecting guidelines. The second is more eclectic, requires a deep knowledge of the problem and therefore patient management becomes more complex and difficult."



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A Florentine enigma. Is the hand of Botticelli's famous Venus protecting her modesty or hiding a scar?