Lessons to be learned courtesy of PIP

Who is really to blame for the implantation of sub-standard PIP breast implants and what can be done to close any regulatory loopholes? Senior medtech expert Jeremy Tinkler* looks at some of the background factors that can throw light on the issue and concludes that routine post-market surveillance has been irrelevant and that the underlying problem is the lack of effective sanctions.

Once the political stakes have been raised, the parties in the firing line lose no time in apportioning blame, often displaying a determined disregard for the facts.

This was exemplified by the recent accusation, by the chairman of the Harley Medical Group (a London-based private healthcare provider), that the MHRA was responsible for checking and approving PIP breast implants for use in the UK, thus vindicating his own industry’s position as innocent victim.

There can be no excuse for such misinformation in a public statement, but then it is difficult to explain who is to blame.

It is worth considering some of the history: breast implants are responsible for the longest running and most controversial debate in the history of medical devices and PIP has already played its part in the controversy.

In the 1990s, PIP was one of several manufacturers to cash in on concerns over the safety of silicone gel implants by developing alternative fillers (concerns which later turned out to be unfounded according to several expert groups). The first of these “alternative filler” implants to come under scrutiny from the UK’s Medical Devices Agency (the MDA, now part of MHRA) used a soya bean oil filler and was withdrawn in 1999 (see Box 1).

Responding to subsequent questions from plastic surgeons as to what other breast implants might be hazardous, the MDA was able to provide reassurance about implants filled with silicone gel or saline and turned its attention to two types of implant that were filled with hydrogels, one of them made by PIP. These were also withdrawn from the market (see Box 2).

All three devices were withdrawn due to deficiencies in pre-clinical assessment, identified during a review of the manufacturers’ Technical Files by the MDA. The question of why the deficiencies had not been discovered by the notified bodies prior to CE marking was not lost on regulators. Since that time, breast implants have been reclassified upwards, leading to more specific technical review by notified bodies, and firmer control of the activities of notified bodies began to be implemented.

How is it that these measures failed to prevent a further fiasco, precipitated by one of the very companies that was found wanting previously?

Some healthcare providers have been criticised recently for poor record-keeping and under-reporting of problems, but inadequate post-market surveillance has always been an issue with breast implants.

In 1993, the Commissioner of the US FDA wrote that the use of breast implants by surgeons for 20 years without an adequate assessment of their safety was an abrogation of responsibility by plastic surgeons.

Systematic clinical studies have now been carried out with silicone gel breast implants, but under-reporting of adverse incidents remains endemic.

Although MDAs’ investigation into soya bean oil filled implants was initiated by concerns raised by users, an evaluation of user experience was only possible after the MDA made a direct approach to the relevant professional bodies.

Only one adverse incident for each type of hydrogel implant had been reported to MDA, but they were
Vigilance has therefore been largely incidental to regulatory action with breast implants and cannot be seen as a reliable way of compensating for inadequacies in pre-market assessment.

It is easy to say that the regulations or the regulators are to blame and, indeed, further tightening up of aspects of the regulatory system is expected.

However, there is also much consensus that the regulatory requirements themselves, i.e. the essential requirements, are proportionate and fit for purpose.

The main deficiency in the European medical device regulations is that they are designed for compliance and not for non-compliance.

Of the three types of breast implant, a definite toxic risk has only been established for those filled with soya bean oil. In this case it was fortuitous that, following two successive company takeovers, full responsibility for the research and explantation programmes was taken on by the large multinational company that acquired the product.

Thus, in a textbook example of the way the precautionary principle should operate, the politics and recrimination associated with unmet liabilities were avoided.

But this does not always happen: the other two manufacturers have walked away from their responsibilities by going into liquidation.

In most EU countries, there are no financial or custodial penalties under medical device legislation; the most a competent authority can do in the face of a non-compliant product is to order it off the market, which can precipitate the bankruptcy of the manufacturer.

This is the part of the regulatory system that is in greatest need of change.

But let us not lose sight of the fact that non-compliance is illegal and that the European regulatory system works perfectly well with the 99% of device manufacturers who wish to comply.

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**Box 2: Hydrogel implants**

In 1999, MDA reviewed the Technical Files for Novagold and PIP hydrogel implants and, in both cases, found that their biological safety data were inadequate. Both manufacturers had carried out animal studies that were methodically flawed but which revealed pathological changes distant from the implantation sites. This indicated the possibility of a systemic toxic effect but, without further studies to investigate this possibility, it was impossible to determine whether the implants were safe or not. Both implants were withdrawn from the market as a precautionary measure. One manufacturer went into liquidation immediately, the other followed ten years later.