Liu and Sia (p 1410) found that women who had had epidural analgesia with low dose bupivacaine were more likely to have an instrumental vaginal delivery, but not a caesarean section. Women receiving epidural analgesia had a longer second stage of labour and needed oxytocin more often, but they had better pain relief.

POEM*

Breast augmentation is unlikely to affect cancer identificaton

Question Does breast augmentation interfere with the detection of breast cancer?

Synopsis Studies have shown that breast augmentation is not associated with an increased risk of breast cancer. It is uncertain, however, whether implants can interfere with the detection of breast cancer and delay diagnosis, possibly compromising treatment and long term survival. Data from women followed prospectively in seven separate mammography registries were examined to determine mammography accuracy and tumour characteristics at diagnosis for women with and without breast augmentation. A total of 137 women with augmentation who were diagnosed with breast cancer were each matched with five women without augmentation but with breast cancer by age, race or ethnicity, index examination within two years of diagnosis, first or subsequent mammograms, and mammography registry. To calculate the sensitivity and specificity of mammography, mammograms were selected that occurred within one year of cancer diagnosis. Among asymptomatic women, the sensitivity (the percentage of women with the disease who test positive) was lower in women with breast augmentation than women without (45.0% *v* 66.8%; $P = 0.008$), and specificity (the percentage of women without the disease who test negative) was slightly higher in women with augmentation (97.7% *v* 96.7%; $P < 0.001$). Among symptomatic women, the sensitivity and specificity of mammography were non-significantly lower for women with augmentation. Tumour characteristics (stage, size, receptor status, and nodal status) at diagnosis were not different in asymptomatic women with or without augmentation. Interestingly, among symptomatic women, those with augmentation had tumours with better prognostic characteristics, including smaller size, lower grade, and oestrogen receptor positive status.

Bottom line Breast augmentation decreases the sensitivity of screening mammography in asymptomatic women but does not increase the false positive rate. The prognostic characteristics of tumours at the time of diagnosis and treatment in these women are not influenced by augmentation, suggesting but not proving that there is no effect on long term morbidity or mortality. Among symptomatic women with augmentation, accuracy of mammography seems unaffected and the prognostic characteristics of tumours are slightly more favourable. Women with breast augmentation should be encouraged, like other women, to undergo routine screening mammography at recommended intervals.

Level of evidence 2b (www.infopoems.com/levels.html). Individual cohort study or low quality randomised controlled trials (< 80% follow up).

Miglioretti DL, Rutter CM, Geller BM, et al. Effect of breast augmentation on the accuracy of mammography and cancer characteristics. *JAMA* 2004;291:442-50.

* Patient-Oriented Evidence that Matters. See editorial (*BMJ* 2002;325:983)

Editor's choice

Do mistakes matter?

Now hear this. Non-steroidal anti-inflammatory drugs are better than opioids for relieving renal colic (p 1401). Now hear another thing. Enteral nutrition produces a quicker recovery from acute pancreatitis than parentral nutrition (p 1407). And another two. Epidural analgesia does not increase risk of caesarean section (p 1410), nor does *H pylori* eradication have any effect on heartburn or reflux (p 1417). But can you believe what you hear?

A study recently published on Biomedcentral (www.biomedcentral.com) found statistical inconsistencies in 38% of papers in *Nature* and 25% in the *BMJ*. Emili Garcia-Berthou and Carles Alcaraz examined a selection of manuscripts published in 2001 and concluded that these errors were "probably mostly due to rounding, transcription, or type-setting." Their verdict is that statistical practice is poor and that "quality of papers should be more controlled and valued." What isn't clear is whether any of these errors altered the interpretation of the study findings.

Although the world regards scientific peer review as a watertight process, all the evidence suggests that it is imperfect. But it is the best method we have of evaluating scientific manuscripts. Research done at the *BMJ* shows that peer reviewers identify only a minority of major errors in a manuscript—so what hope is there of them identifying these minor ones? And what can journals do to eradicate these errors?

One option would be to recalculate all the numbers in accepted papers but our review process—which selects around 7% of 7500 submissions—would grind to a halt if we tried to do so. In any case the *BMJ* is rare among scientific journals because all published research papers have been evaluated by a statistician and statisticians are present at our editorial meetings when we decide which papers to publish. Again, we don't ask our statistical advisers to routinely recalculate all the statistics unless we have particular concerns about a paper.

Another would be to ask authors to make raw data available to journals and readers so that errors can be more clearly identified. With web based submission systems and online publication all this becomes much more feasible. Making raw data available would also help editors and statisticians identify fraudulent research, preferably before publication.

Yet our experience of obtaining raw data from authors is that it is a drawn out and miserable process. And if we insisted on seeing raw data before sending a paper out for peer review would authors see this as another barrier to submission along with all the other requirements we now have?

Probably, and hear this, we are about to add one more. With growing evidence that many studies deviate from their protocols—some in important ways like a change in primary outcome measure halfway through—we will soon be asking authors to send us study protocols before we agree to offer their paper to the inexact science of peer review.

Kamran Abbasi *deputy editor kabbasi@bmj.com*