Reviewer's report

Title: Association between Expression of the Bone morphogenetic proteins 2 and 7 in the repair of circumscribed cartilage lesions with clinical outcome

Version: 2 Date: 11 May 2010

Reviewer: Gerjo van Osch

Reviewer's report:

This is a short study with a clear conclusion. It is interesting and original. Although part of the study has been published before, the data on BMP2 and BMP7 as well as most of the clinical scores have not been published before.

The major question I have is regarding the statistical power. Since only 5 control patients without cartilage lesions have been used, it is questionable if the power is sufficient to detect differences in BMP concentrations in patients with cartilage lesions compared to controls. Because I realize that getting controls is very difficult AND that the previous study did show differences in other growth factors, I would accept this as a small weakness of the study, because of the conclusion and the originality. The authors should also realize that by measuring several growth factors, the p-value for statistical significance should be corrected, even if most of the data are published in another article. Based on the above however, I would like to advice the authors to be careful with the statements the use about “no differences”. For example in the abstract I would prefer: “no statistical differences could be detected in concentrations of BMP2 or BMP7 in the lavage fluids of knees with cartilage lesions compared to the control group”.

The authors conclude that BMP2 might be suitable as prognostic indicator for clinical outcome. However, the relation holds true for the concentration of BMP after surgery has been performed. It is unclear to me, how this could influence clinical practice, so what the value would be for clinical practice to be able to do a prognosis after the surgery has been performed. I invite the authors to explain this in the discussion or change the conclusion.

In the materials and methods the assays for the other growth factors are mentioned too. The data are used to show that in contrast to BMP2 these cytokines do not correlate with clinical parameters. Therefore these data are valuable. However, they now just “appear”. In the introduction or aim of the study they are not mentioned (they only mentioned very correctly that the data on these cytokines is published elsewhere). Announcing the use of these data in the introduction might prevent confusion.

Detection of cytokines and growth factors in body fluids can be very complicated. Did the authors check if the lavage did not disturb measurements, for example by spiking of known concentrations of the growth factors/cytokines?

The relation between BMP2 and clinical outcome is very interesting. However,
the authors do not mention all possible or likely explanations for the biology behind a relation. They do mention a link of BMP2 with cartilage repair, but cartilage in itself will not be directly linked to pain. The value of the paper would improve by more discussion on other possible mechanisms like BMP and bone turnover or maybe even discussion on a role of BMP in nervous regeneration. For example could the BMP concentrations be linked to (differences in) bone turnover because of (different amount of) “damaging” of the subchondral bone during surgery. Maybe be more damage to the bone will induce better cartilage repair and better clinical outcome?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

no competing interests