

have died; one entered intensive care after the procedure and is still there. Macchiarini has previously told *Nature* that the problems faced by the patients were unrelated to the transplants.

The investigation began after four Karolinska physicians who were involved in the care of those three patients filed complaints. Karl-Henrik Grinnemo, Matthias Corbascio, Thomas Fux and Oscar Simonson provided medical records that they alleged to be at odds with the published results, and called into question the paper on the rat model.

In compiling the report, Gerdin says, he tried to avoid matters of interpretation that would become “a quarrel between scientists”, and stuck to facts such as whether the medical records showed evidence of a follow-up at the intervals claimed. In some instances, publications claimed improvement even though there was no evidence that the patients had been examined. “This is falsification,” says Gerdin. Speaking of Macchiarini, he adds: “The basic rule in science is to have all reports documented, but he doesn’t have them.” The rat-model paper included weight-gain and computed-tomography (CT) data that had been misinterpreted to suggest that the oesophageal graft was more successful than it was, says Gerdin.

He concludes that the misrepresentations were deliberate: “If there is a mistake once, you might think it is random. If it happens several times, you begin to question whether it really is random.”

The investigation focused on Macchiarini, but Gerdin notes that Grinnemo, Corbascio and Simonson were co-authors of one of the papers² included in the investigation involving a patient, and that Grinnemo was also a co-author of a second¹. “I’m not saying they share the responsibility, but one has to ask what they knew and what they didn’t know,” says Gerdin.

“The basic rule in science is to have all reports documented, but he doesn’t have them.”

The three physicians did not respond to a request for comment, but Corbascio had previously told *Nature* that he was involved only “at a superficial level” with the transplant recipient. “I had complete confidence in Macchiarini,” he said.

Separately, on 9 April, the Swedish Medical Products Agency (MPA) filed a complaint with the Swedish state prosecutor over whether proper permission was obtained to carry out the three synthetic tracheal transplants that feature in Gerdin’s investigation. The operations took place at the Karolinska. Ann Marie

Janson Lang, a clinical assessor in the clinical-trials department of the MPA, says that the synthetic tracheas meet the definition of an “advanced therapy medicinal product”, which requires agency permission before it can be given to patients, but that no application for a permit was made.

It is not clear who would bear responsibility for the breach, if it is confirmed. Macchiarini told *Nature* that, as a visiting professor at the Karolinska, “it was never my responsibility to obtain any necessary permissions. I was not directed to do so, nor did I have the authority to do so.” As *Nature* went to press, a Karolinska spokesperson said that the institute was preparing to post on its website “the facts about the three operations that Macchiarini performed and other matters connected to that case”. The state prosecutor is expected to report back within weeks. ■

1. *Lancet* **378**, 1997–2004 (2011).
2. *Biomaterials* **34**, 4057–4067 (2013).
3. *Nature Commun.* **5**, 3562 (2014).

CORRECTION

The map in the News Feature ‘India by the numbers’ (*Nature* **521**, 142–143; 2015) omitted the province of Meghalaya. The full map can be seen at go.nature.com/h2ydqb.