

Observations on the origin of congenital intestinal atresia

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The article by Louw and Barnard entitled 'Congenital intestinal atresia – observations on its origin' published in *The Lancet* in 1995¹ was a landmark paper that elucidated the pathogenesis of intestinal atresia and radically altered the surgical treatment of the condition.

As a result of a review of cases of intestinal atresia at Great Ormond Street Hospital, Louw postulated that at least some atresias might have been due to interference with the blood supply to that portion of the fetal gut. This study was published in the *South African Journal of Clinical Science* in 1952.

Louw and Barnard proposed that 'strangulation of foetal bowel may end in disappearance of the inflected portion, with, at most, a complicating meconium peritonitis'. This sequence of events was possible only because of the sterile environment of the fetal intestine in *utero*.

Barnard embarked on a series of experiments involving interfering with the blood supply to a segment of bowel in the fetal pup. Barnard stated triumphantly in this article that 'after many disappointments due to anaesthetic and technical difficulties, death of the foetus, premature labour and

cannibalism, success has now been achieved in two animals'. This was a remarkable achievement at the time and a testament to Barnard's persistence and technical skills.

The outcome of the experiments together with the clinical findings at surgery supported the theory of a 'vascular accident' as the cause of intestinal atresia. From a practical point of view, the authors made the assumption that if the vascular origin of atresia was accepted, it was likely that the blood supply to portions of the bowel adjacent to the atretic segment would be compromised, not sufficiently to cause necrosis but sufficiently to cause a functional problem with resultant defective peristalsis.

Their recommendation was that the blind bulbous end of the proximal intestine should always be resected before an anastomosis is performed. The immediate result of this policy was a reduction in the mortality for intestinal atresia at Great Ormond Street Hospital from 69% to 33%. The advice was rapidly adopted universally and became standard in the management of intestinal atresia. A truly remarkable achievement.

1. Louw JH, Barnard N. Congenital intestinal atresia: Observations on its origin. *Lancet* 1995; 19 Nov: 1065-1066.