

## Postpartum Hemorrhage: A Continuous Challenge

### Hemorragia Pós-Parto: Um Desafio Contínuo

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Postpartum hemorrhage (PPH) is still the major cause of maternal mortality worldwide. According to the World Health Organization (WHO), PPH is responsible for over 20% of all maternal deaths.<sup>1</sup> Bearing in mind that it is largely preventable and treatable in most cases, it is urgent to take measures to change these numbers. That is why WHO presented “A roadmap to combat postpartum haemorrhage between 2023 and 2030” with goals, strategies and advocacy plans to decrease the impact of this problem, namely in low- and middle-income countries.<sup>2</sup> On the other hand, in high income countries, PPH was virtually eliminated as a cause of maternal mortality. This is the case in Portugal.

In 2022, maternal mortality in Portugal was in the media spotlight, as the numbers provided by the National Statistics Institute (INE) showed a record number of maternal deaths back in 2020.<sup>3</sup> It was the highest number of maternal deaths since 1982. Although the causes were not mentioned, it was hypothesized that an older maternal population with more health issues contributed to the increasing mortality. Data from 2021 is already known and the tendency towards increasing maternal mortality was not confirmed.<sup>4</sup> Postpartum hemorrhage was not mentioned in this discussion, but our experience as doctors in Portugal corroborates that while it is mostly preventable and treatable, it may be an important cause of morbidity. There are no nationwide numbers; nevertheless, it is an important cause of postpartum hysterectomy, limiting the future reproductive plans of these women.

Prompt intervention is a matter of fundamental importance when dealing with PPH since the success of conservative measures highly depends on it.<sup>5,6</sup> The cascade of interventions that ranges from bimanual massage and medical treatment to a hysterectomy is well defined in almost every Portuguese hospital. Although there’s an order of interventions, the decision between the different approaches can be made by the clinician in charge to save the woman’s life and, if possible, to preserve the uterus.<sup>5,6</sup>

B-Lynch *et al* description of compressive uterine sutures to treat postpartum hemorrhage due to uterine atony has changed the conservative approach for PPH treatment.<sup>7</sup>

The subsequent descriptions of other uterine sutures to treat PPH confirmed the success of this method and its feasibility in many situations besides uterine atony.<sup>8</sup> A recent search in PubMed revealed that more than 122 papers about uterine compressive sutures have been published in the last 20 years. Nevertheless, robust data supporting the procedure’s safety and effectiveness are lacking. This is why wider case series, like the one reported by Féria *et al*<sup>9</sup> in this edition of Acta Médica Portuguesa are important.

Alcides Pereira’s suture was first used in 2002 in Hospital Garcia de Orta, near Lisbon, Portugal, and it was published in 2005 as a new approach to treat postpartum hemorrhage due to uterine atony.<sup>10</sup> Differently from previous reports, this method uses uterine sutures (three in a transverse, and two in a longitudinal fashion) with stitches that do not enter the uterine cavity. Instead, the suture only involves the serosa and subserosal myometrium. In theory, three objections to uterine compressive sutures were overcome. Firstly, there is no need for a previous uterine incision, since Alcides Pereira’s suture can be performed in cases of vaginal delivery that require surgical intervention for PPH control. This is a clear advantage compared to previous procedures that were described only after caesarean section and with an open hysterotomy. Secondly, there is less risk of uterine synechiae given the lack of contact between the thread used and the uterine cavity. In theory, there may be a lower risk of postoperative infection and less risk of fertility impairment. Finally, there is a lower risk of intestine entrapment in the suture thread due to the small bites performed in the uterine wall. This characteristic can also signify an advantage in terms of uterine compression efficacy since it may represent a more uniform pressure around the uterine wall.

Data presented by Féria *et al* provide important evidence supporting the effectiveness and safety of Alcides Pereira’s suture in controlling PPH. Their data represent the biggest case series presented so far about this type of suture. Moreover, the results also state that Alcides Pereira’s suture is effective in other settings, and not only with uterine

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atony, as described in 2005. They show the application of this technique in other causes of PPH, namely placental abruption, placenta previa and placenta accreta spectrum or uterine inversion. However, it is notorious that the two unsuccessful cases were in this subgroup of patients, where uterine preservation is more challenging.

Another curious aspect of this work is that half of the described cases had occurred in the previous three years. On the one hand, this might indicate that doctors are more aware of this kind of procedure and make the decision to perform it more promptly, resulting in quicker hemorrhage control and better outcomes. On the other hand, this short time span is an important limitation for future fertility analyses. Still, the presented results were optimistic. The follow-up of these patients is also an undetermined issue, but given the complications described in the literature, a clinical assessment in the first weeks after delivery should be recommended. Moreover, it seems reasonable to perform a hysteroscopy and a gynecologic ultrasound a couple of months later, or at least before a new pregnancy.

The unexpected nature of PPH and the low number of cases in developed countries limit more robust studies comparing different strategies for its treatment. Still, an effort to promote randomized interventions with clear protocols and a clear definition of outcomes is vital to achieving bet-

ter evidence-based treatment. The different causes of PPH hemorrhage, surgical experience, and quick assessment of the chosen approach for PPH treatment in an emergency context are also limitations in obtaining better evidence. Féria *et al* mention those limitations in their work and observe that the high effectiveness identified may be due to the early implementation of Alcides Pereira's suture and their familiarity with the technique. These limitations may also be taken as important advice: early implementation of uterine compression sutures seems to be associated with higher success rates. Therefore, they should be considered and integrated into PPH treatment algorithms at an early phase, especially in a more morbid and older population.

### COMPETING INTERESTS

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