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Scientific letters

Hemoperitoneum and the Kristeller maneuver[☆]

Hemoperitoneo y maniobra de Kristeller



Traditionally, many maneuvers have been used to favor childbirth. One of the most popular has been the Kristeller maneuver,¹ which involves applying pressure on the uterine fundus in the mother's abdomen, from the ribs towards the pelvis and birth canal. Although its use is common and its main purpose is to facilitate delivery, either as a routine maneuver or to avoid complications (fetal distress, failure to progress, exhaustion of the mother),^{2,3} its use is extensively debated. Meanwhile, the prevalence of its use is unknown. In addition, no confirmed benefits of the procedure have been documented, and adverse events have been reported in association with its use, including uterine rupture, cervical laceration, episiotomy, urinary incontinence, brachial plexus injuries, and neonatal fractures and brain damage.⁴

We document the case of a 35-year-old woman with a history of a very difficult labor and delivery, during which the Kristeller maneuver was performed. In the hour after delivery, the midwife observed sustained hypotension, which did not respond to fluid therapy, and signs of hypovolemic shock. Given the progressive warning signs, the patient was evaluated for urgent surgery. During emergency laparotomy, we observed hemoperitoneum of about 2–3 L and rupture of the right ovarian vein at its insertion in the vena cava was observed, which we ligated. The patient evolved favorably and was discharged 2 days later with no complications.

The application of fundus pressure during the second stage of labor (also known as the Kristeller maneuver) continues to be one of the most controversial, poorly studied and least reported maneuvers in obstetrics.^{3,5} This maneuver, which is generally applied to accelerate labor, is used to a variable degree; in some hospitals it is never used and is considered obsolete, while in others it is considered a routine procedure.⁶ The truth is that data on its use are often not documented, yet many complications have been associated with the maneuver.^{2,3,7} Many studies have not found any proven benefit to its application. The quality of the existing evidence on the benefits and risks of the maneuver is generally poor. A recent

Cochrane review found that there is insufficient evidence to draw conclusions about the beneficial or harmful effects of fundal pressure, and these authors encouraged further research.³

In this context, and with the aim to reduce the number of procedures not based on evidence in childbirth care, in 2007, the Spanish Ministry of Health published the Strategy for Assistance at Normal Childbirth in the National Health System.⁸ More than 5 years after the implementation of the strategy, it was found that the maneuver was still used in 25% of vaginal deliveries in Spanish public hospitals. In 2014, the “Stop Kristeller” campaign tried to create social awareness about its use.⁹

Obstetric interventions with a poor level of evidence that does not justify their use are prevalent in many healthcare systems and can harm mothers and babies during labor and delivery.¹⁰ The Kristeller maneuver can cause serious complications that can even lead to death, and its use should be based on high-quality evidence that justifies this practice.

REFERENCES

1. Kristeller S. Die Expressio foetus. Neues Entbindungsverfahren unter Anwendung von äußeren Handgriffen. Monatszeitschrift für Geburtskunde und Frauenkrankheiten. 1867;29:337–87.
2. Verheijen EC, Raven JH, Hofmeyr GJ. Fundal pressure during the second stage of labour. Cochrane Database Syst Rev. 2009;(October):CD006067.
3. Hofmeyr GJ, Vogel JP, Cuthbert A, Singata M. Fundal pressure during the second stage of labour. Cochrane Database Syst Rev. 2017;3(March):CD006067.
4. Merhi ZO, Awonuga AO. The role of uterine fundal pressure in the management of the second stage of labor: a reappraisal. Obstet Gynecol Surv. 2005;60:599–603.
5. Zanonato G, Cavaliere E, Cherubini G, Bortolami O, Mantovani E, Iacovella C, et al. Fundal pressure (Kristeller maneuver) during labor in current obstetric practice:

[☆] Please cite this article as: Gil J, Rodríguez JM, Hernández Q, González M, Torregrosa N. Hemoperitoneo y maniobra de Kristeller. Cir Esp. 2021;99:468–469.

- assessment of prevalence and feto-maternal effects. *Minerva Ginecol.* 2014;66:239-41.
6. Moiety FMS, Azzam AZ. Fundal pressure during the second stage of labor in a tertiary obstetric center: a prospective analysis. *J Obstet Gynaecol Res.* 2014;40:946-53.
 7. Youssef A, Salsi G, Cataneo I, Pacella G, Azzarone C, Paganotto MC, et al. Fundal pressure in second stage of labor (Kristeller maneuver) is associated with increased risk of levator ani muscle avulsion. *Ultrasound Obstet Gynecol.* 2019;53(January):95-100.
 8. Strategy for Assistance at Normal Childbirth in the National Health System. Madrid: Ministry of Health and Consumer Affairs; 2007. Available from: <https://www.mscbs.gob.es/organizacion/sns/planCalidadSNS/pdf/equidad/estrategiaPartoNormalEnglish.pdf>.
 9. Rubashkin N, Torres C, Escuriet R, Dolores Ruiz-Berdún M. "Just a little help": a qualitative inquiry into the persistent use of uterine fundal pressure in the second stage of labor in Spain. *Birth.* 2019;46:517-22.
 10. Miller S, Abalos E, Chamillard M, Ciapponi A, Colaci D, Comandé D, et al. Beyond too little, too late and too much,

too soon: a pathway towards evidence-based, respectful maternity care worldwide. *Lancet (London England).* 2016;388(October (10056)):2176-92.

José Gil*, José Manuel Rodríguez, Quiteria Hernández, Miguel González, Nuria Torregrosa

Servicio de Cirugía General y Digestiva, Hospital Clínico Universitario Virgen de la Arrixaca, Murcia, Spain

*Corresponding author.

E-mail address: pepegilmartinez@gmail.com (J. Gil).

2173-5077/

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Non-surgical spontaneous pneumoperitoneum in a COVID-19 positive patient with severe bilateral pneumonia[☆]



Neumoperitoneo espontáneo no quirúrgico en paciente COVID-19 positivo con neumonía bilateral severa

Non-surgical spontaneous pneumoperitoneum represents 10% of cases described in the literature.¹⁻⁸ It is difficult to diagnose and responds to conservative management, which reduces iatrogenesis.^{1,2,4-7}

We present the case of a 46-year-old male with no history of interest, who came to the emergency department due to dyspnea and a fever of 39 °C. He was diagnosed with bilateral viral pneumonia due to COVID-19 infection (positive nasopharyngeal polymerase chain reaction [PCR]). The patient was hospitalized, and in the first 48 h he developed severe global respiratory failure and was transferred to the ICU, requiring mechanical ventilation (MV) in IPPV mode with FiO₂ 0.6, PEEP 14 cmH₂O, 480 mL × 24 bpm. On the 7th day of the ICU stay, he required tracheostomy. The patient received antibiotic treatment with azithromycin and hydroxychloroquine, later in association with meropenem and cefazoline due to suspected bacterial superinfection. High-dose corticosteroid therapy was also administered.

On the 16th day of the ICU stay, the patient was disconnected from MV after improved respiratory condition. The follow-up chest X-ray detected right subdiaphragmatic

pneumoperitoneum (Fig. 1), at which time we were called in for consultation. Analytically, compared to the previous day, a significant drop in leucocytes was observed (from 27 000 to 17 000 μ/L), as well as in C-reactive protein (from 256 to 84 mg/L). Transaminases continued to be elevated, but with a clear descending pattern (ALT: 171 IU/L; AST: 52 IU/L). Procalcitonin: 0.04 ng/mL. The patient was asymptomatic from an abdominal standpoint. Intestinal transit was maintained, with no fever or associated symptoms.

Thoracoabdominal CT scan was performed with intravenous contrast, with a nasogastric tube and rectally. Confluent patchy multifocal opacities were observed in both lungs, predominantly peripheral, as well as consolidations of posterior and baseline predominance with air bronchogram related to known viral pneumonia due to COVID-19. In the abdomen, abundant pneumoperitoneum with contrast filling was observed in the entire colon and small bowel loops, with no leakage. This was associated with a minimal amount of free abdominal fluid, but no areas of fat rarefaction suggesting inflammatory involvement, as well as multiple reactive abdominal lymphadenopathies (Fig. 2).

[☆] Please cite this article as: Gemio del Rey IA, de la Plaza Llamas R, Ramia JM, Medina Velasco AA, Díaz Candelas DA. Neumoperitoneo espontáneo no quirúrgico en paciente COVID-19 positivo con neumonía bilateral severa. *Cir Esp.* 2021;99:469-471.