3. In cases of suspected catamenial pneumothorax, it is important to perform a thorough examination of the chest cavity and lung parenchyma to check for possible endometriosis and diaphragmatic defects. It is also advisable to perform a lung biopsy. The studies included in the references provided by Rombolá et al[1] include one that recommends the treatment described above.[5] We are of the opinion that hormone treatment for these authors' patient is essential; furthermore, in the event of a relapse, a priority consideration should be surgery to repair the diaphragm.

References

1. Rombolá CA, del Pozo P, Honguero Martínez A, León Atance P. Diafragma multifenestrado como único hallazgo toracoscópico en neumotórax recidivante. Arch Bronconeumol. 2008;44:646.
2. Alifano M, Jablonski C, Kadiri H, Falcoz P, Gompel A, Camilleri-Broet S, et al. Catamenial and noncatamenial, endometriosis-related or nonendometriosis-related pneumothorax referred for surgery. Am J Respir Crit Care Med. 2007;176: 1048-53.
3. Alifano M, Trisolini R, Cancellieri A, Regnard JF. Thoracic endometriosis: current knowledge. Ann Thorac Surg. 2006;81:761-9.
4. Leong AC, Coonar AS, Lang-Lazdunski L. Catamenial pneumothorax: surgical repair of the diaphragm and hormone treatment. Ann R Coll Surg Engl. 2006;88: 547-9.
5. Akal M, Kara M. Nonsurgical treatment of a catamenial pneumothorax with a Gn-RH analogue. Respiration. 2002;69:275-6.

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Authors' Reply to "Treatment of Catamenial Pneumothorax With Diaphragmatic Defects"

Respuesta de los autores a "Tratamiento del neumotórax catamenial con defectos diafragmático"

To the Editor:

We have read with care the letter in regard to catamenial pneumothorax from Sánchez-Lorente et al, written in response to our own letter.[1] We thank these authors for their interest and congratulate them on their experience with catamenial pneumothorax. Nonetheless, we wish to make some clarifications based on the medical literature:

1. Most authors (including those cited by Sánchez-Lorente et al) define catamenial pneumothorax as recurring pneumothorax that occurs during the period comprising the day before and the 3 days after menstruation.[1-3] The word *catamenial* comes from Greek and means *monthly*.[3] In medicine the term is used to describe any process associated with menstruation. The inclusion of ovulation (which is very difficult to determine a posteriori) in the definition of catamenial pneumothorax used by Sánchez-Lorente et al would imply that practically all cases of pneumothorax in women of child-bearing age would fall into this category. It is indeed true that small pneumothoraces may go undetected for some days, but this is unlikely if the pneumothorax is significant.
2. Although the physiopathology of catamenial pneumothorax is not well understood, it is unlikely that a single mechanism is responsible for all cases of the disease.[1-3] Only 22% to 37% of cases are associated with endometriosis (histologically demonstrated), and 19% to 33% with fenestrations or diaphragmatic nodules.[1,3] The following mechanisms have been suggested: *a)* spontaneous rupture of blebs, *b)* rupture of alveoli favored by the bronchoconstrictor effect of certain prostaglandins, *c)* necrosis-desquamation of endometriotic foci in the visceral pleura, and *d)* air from the genitalia entering the diaphragm via congenital or acquired openings.[2,3] Air entry in the vagina–during sexual intercourse or intense exercise–is facilitated by reduced cervical mucous viscosity, and especially during menstruation.[2,3] This particular mechanism is well documented for cases of spontaneous pneumoperitoneum in which, obviously, there is no diaphragmatic abnormality. If fenestrations exist, they are likely to be associated with a pneumothorax.[4]
3. The origin of fenestrations is uncertain.[2,5] They may be due to congenital lesions in the diaphragm or may be secondary to endometriosis.[2] Although pleural endometriosis most often occurs adjacent to the diaphragmatic pleura, some authors have reported fenestrations that are not associated with catamenial pneumothorax or thoracic endometriosis.[2,5]
4. Finally, we agree with the treatment proposed by Sánchez-Lorente et al for catamenial pneumothorax and pleural endometriosis. Nonetheless, 2 doubts remain. Should we manage as thoracic endometriosis cases such as that described by us in our previous letter–with 3 pneumothorax episodes unrelated in any way to the menstrual cycle and occurring outside the menstrual period (noncatamenial pneumothorax), with pleural and lung biopsies ruling out endometriosis (the patient was operated on, coincidentally, on the first day of menstruation, after 5 days of simple pleural drainage), without signs or symptoms of pelvic or peritoneal endometriosis, and with diaphragmatic fenestrations as the only thoracoscopic finding? And if pneumothorax recurrence can be avoided with effective pleurodesis, can resection of the entire multifenestrated right phrenic region be justified? These questions have not as yet been properly addressed–with suitable statistical data–in the medical literature.

Talc pleurodesis performed during thoracoscopy proved effective for our patient, who remains asymptomatic and who has had no recurrence of pneumothorax in the 2 years that have elapsed since treatment. As recently as 2 months ago, she was treated for anemia-inducing hypermenorrhea by means of a laparoscopic intramural uterine myomectomy; no evidence of pelvic endometriosis was found. The fact that the laparotomy did

not result in a pneumothorax, despite the diaphragmatic fenestrations, can be taken as evidence of the efficacy of the talc pleurodesis.

In conclusion, we are of the opinion that catamenial pneumothorax, thoracic endometriosis, and diaphragmatic fenestrations cannot be considered to be synonymous, although they may, on occasion, be associated.

References

1. Rombolá CA, del Pozo P, Honguero Martínez A, León Atance P. Diafragma multifenestrado como único hallazgo toracoscópico en neumotórax recidivante. Arch Bronconeumol. 2008;44:646.
2. Alifano M, Jablonski C, Kadiri H, Falcoz P, Gompel A, Camilleri-Broet S, et al. Catamenial and noncatamenial, endometriosis-related or nonendometriosis-related pneumothorax referred for surgery. Am J Respir Crit Care Med. 2007;176:1048-53.
3. Cowl CT, Dunn WF, Deschamps C. Visualization of diaphragmatic fenestration associated with catamenial pneumothorax. Ann Thorac Surg. 1999;68:1413-4.
4. Jacobs VR, Mundhenke C, Maass N, Hilpert F, Jonat W. Sexual activity as cause for non-surgical pneumoperitoneum. JSLS. 2000;4:279-300.
5. Kirschner PA. Catamenial pneumothorax: an example of porous diaphragm syndrome. Chest. 2000;118:1519-20.

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