



Hymen Restoration: A Personal Technique

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Abstract

Background

Hymenoplasty is one of the least described vulvovaginal procedures in plastic surgery without any surgical standard that attempts to restore the hymen's ability to bleed during sexual intercourse on a couple's wedding night.

Objective

The objective of this study is to report outcomes from a Moroccan retrospective study of a series of 518 patients who underwent either a hymenorrhaphy or a hymenoplasty.

Material and methods

This was a retrospective study of 518 patients who underwent hymen restoration at a center in Morocco between April 2010 and April 2019.

The data were collected according to the requirements of the center through pre- and post-operative consultations, post-coital after the wedding night or by telephone.

Hymenorrhaphy

The procedure consisted of suturing the edges of the hymen remnants using Vicryl 5-0, leaving a small opening in the newly reconstructed hymen.

Hymenoplasty

Two techniques Hymenal Flap Hymenoplasty (HLH) and Vaginal Flap Hymenoplasty (HLV) are used depending on the presence or absence of hymen remnants.

Results

A total of 518 patients were underwent hymen restoration, including 42% hymenorrhaphies, 58% hymenoplasties, 39% HLH, and 19% HLV. The average age of the patients was 32 years.

Of the 227 women who underwent a hymenorrhaphy, no failure was reported, and all the patients who had sexual intercourse within 15 days of the procedure experienced vaginal bleeding.

Of the 99 hymenoplasties using vaginal flaps, only one failure was reported

Conclusion

The techniques used in our cohort are safer and the complications are minor with total satisfaction of patients.

Key word: *Hymenoplasty, hymenorrhaphy, Hymen,*

Introduction

Sex before marriage is socially and religiously unacceptable in certain cultures, as it reflects a feeling of shame and dishonor, with serious consequences that can lead to rejection, divorce or even murder or suicide. (1,2)

Selma, a 27-year-old woman, knows it: her marriage is based on a lie. “But it is better to lie than to suffer the chouha,” she retorted. According to her, the chouha (“humiliation,” in native Arabic) is what Moroccan women who have had sexual intercourse before marriage face.³

“I know many women who have been beaten or repudiated because they did not bleed during their wedding night.” (3)

Virginity is therefore traditionally associated with the integrity of the hymen and the loss of blood on the evening of a couple’s wedding. Consequently, virginity has social, religious, and moral implications.⁴ It is acceptable that a woman who has never had sex has an intact hymen. According to the dictionary, the term “virgin” means that a person has never had sex.

“It is one of the superstitious beliefs of the human mind to have imagined that virginity could be a virtue.” (Voltaire)

“Virginity is girls’ greatest treasure, but it is challenging to keep a treasure for which all men have the key for a long time.” (Marshal of Bassompierre)

“Women are undoubtedly angels, but the hymen is the devil.” Quote from George Gordon Byron (1788-1824).

The hymen is a membrane that partially closes the external vaginal orifice. Until now, several myths have been suggested regarding the anatomy of the hymen, but these are mostly based on dogmas and a lack of scientific knowledge. Nowadays, it is still socially important for a woman to prove her virginity by bleeding during intercourse—a belief that seems difficult to extinguish. From rudimentary subterfuge to genital cosmetic surgeries, “Chinese” artificial hymens, some means have nevertheless been developed to make the management of female sexuality less burdensome and to mitigate the tragic consequences of a possible transgression. (5)

Several alternative practices to restore virginity have existed as far back the 15th century, as confirmed in the writings of the Egyptian theologian, Jalaladdīn Suyūti, who listed nine artifices that can simulate the flow of virginal blood. (3)

Described in 16th and 17th century European literature as the “mending of lost virginity,” hymen reconstruction surgeries have gained traction and visibility over the past decades. Under the term hymenorrhaphy and hymenoplasty, two surgical procedures are currently used to reconstruct an “intact” hymen to ensure that the bride bleeds on the night of her wedding.⁵ Hymenoplasty is thus

performed not only for cultural and religious reasons, but also for social status and interpersonal relationships. (4)

Hymenoplasty, or the surgical restoration of the hymen, is one of the least described vulvovaginal procedures in plastic surgery without any surgical standard that attempts to restore the hymen's ability to bleed during sexual intercourse on a couple's wedding night. (6,7) Moreover, in some cultures it is typical to display the bloodstained nuptial sheet as proof of the bride's virginity.⁶ In some areas, a certificate of virginity may be requested from a physician. (8)

Although controversial from an ethical and social perspective, hymenorrhaphy is now offered in many countries (9) and its demand is increasing in Western countries, especially after successive waves of immigration.

“According to the BBC, hymenoplasty has gained popularity in recent years, especially among young women. Private clinics that offer the procedure, which is legal in the United Kingdom, do not collect data on the number of women who have undergone the procedure, but it is estimated that approximately 9,000 women searched for the procedure on Google in 2019. Mohammad Masood, director of MAS Gynecology Clinic in London, said in the British Daily Metro that the number of women seeking the procedure had quadrupled compared to the previous six years.”

It is challenging to find official data on the number of hymenoplasties performed in the Maghreb. In a study conducted by a Tunisian psychoanalyst, it was estimated that 20% of young Tunisian women were true virgins and that 75% were “medically assisted virgins.”³ According to other sources, “Young women who care less about this phenomenon before marriage represent only 5% of Algerian girls. Approximately 20% were estimated to be real virgins and more than three-quarters were thought to be “medically assisted virgins”. The data are similar to those reported in Morocco.

As the technique of hymenoplasty is not taught,² and given the paucity of papers on the technique, this article highlights findings from a Moroccan retrospective study of a series of 518 patients who underwent either a hymenorrhaphy (which is the temporary restoration of the hymen) or a hymenoplasty (which is the final restoration of the membrane). The objective is to demonstrate that the techniques used are safer and the complications are rare, with total patient satisfaction.

Materials and Methods

This was a retrospective study of 518 patients who underwent hymen restoration at a center in Morocco between April 2010 and April 2019.

The data were collected according to the requirements of the center through pre- and post-operative consultations, post-coital after the wedding night or by telephone.

All the patients were invited for a checkup within 15 days and then once every three months until less than 15 days from their wedding date.

The techniques of hymen restoration, hymenorrhaphy, and hymenoplasty were offered based on the interval between the procedure date and the wedding night.

A hymenorrhaphy was offered if the wedding night was within less than 15 days. If the interval was greater than 15 days, one of the two hymenoplasties was performed: a hymenoplasty using a hymenal flap in the presence of hymen remnants or a hymenoplasty using a vaginal mucosal flap in the absence of hymen remnants.

Both techniques, namely hymenoplasty and hymenorrhaphy, were performed by the same surgeon. All procedures were performed on an outpatient basis under local, general or spinal anesthesia and lasted an average of 25 min (10 to 40 min).

Surgical Technique

Hymenorrhaphy

Among the 529 hymen restorations (performed on 518 patients), 227 hymenorrhaphies were performed. The procedure consisted of suturing the edges of the hymen remnants using Vicryl 5-0, leaving a small opening in the newly reconstructed hymen.

In the case of vaginal laxity, the vagina was tightened with anteroposterior approximation of the vaginal wall with 3-0 running Vicryl, suturing from the vaginal apex to the introitus before suturing the hymen.

Hymenoplasty

Two techniques are used depending on the presence or absence of hymen remnants. In both cases, a posterior perineorrhaphy is systematically performed to avoid tension suturing of the hymen, which might lead to dehiscence. The procedure is performed under general or spinal anesthesia.

Hymenal Flap Hymenoplasty (HLH)

In cases where the hymen remnants were of sufficient size, the edges were incised to separate the external mucosa from the internal mucosa of the hymen, which allowed the exposure of the underlying fascia (Figure 1). The internal hymenal ring was separated by approximately 2 cm from the posterior vaginal mucosa, followed by a dissection of the perirectal compartments until the levator ani muscles are exposed. Two stitches were placed with Vicryl 2 to approximate the levator ani muscles at the midline, which allowed for a reduction of the vaginal introitus. We then proceeded with an edge-to-edge

suturing of the two hymenal flaps with a Vicryl 5-0 and the needle was introduced deep to pick up the approximated muscles and pull them back.

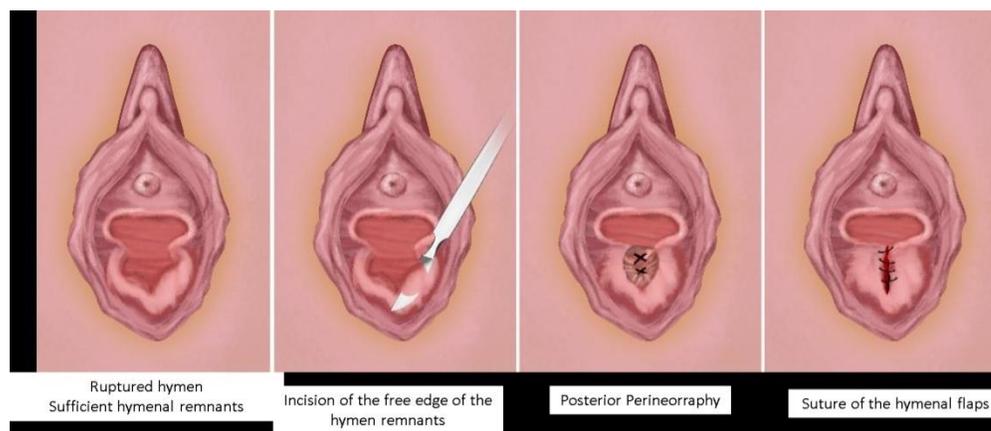


Figure 1. Hymenoplasty using a hymenal flap.

Vaginal Flap Hymenoplasty (HLV)

If no hymen remnants were available, a vertical incision was made through the posterior vaginal wall from the hymen to a depth of approximately 2 to 3 cm (Figure 2). Next, the vaginal was dissected starting at the 6 o'clock position and moving clockwise to the 10 o'clock position and then anticlockwise from the 6 o'clock to the 2 o'clock position. Then, perirectal compartments were dissected to proceed with a perineorrhaphy followed by the closure of the donor site. De-epithelialization was then performed by cutting the external edge of one of the vaginal flaps with fine scissors. The edge was then folded and brought to the internal edge of the fixed edge of the other flap and sutured with Vicryl 5-0 while it was attached to the posterior vaginal wall. The other flap was folded and overlapped over the first one, and it was also so sutured with Vicryl 5-0 on the lateral aspect of the fixed edge of the first flap.

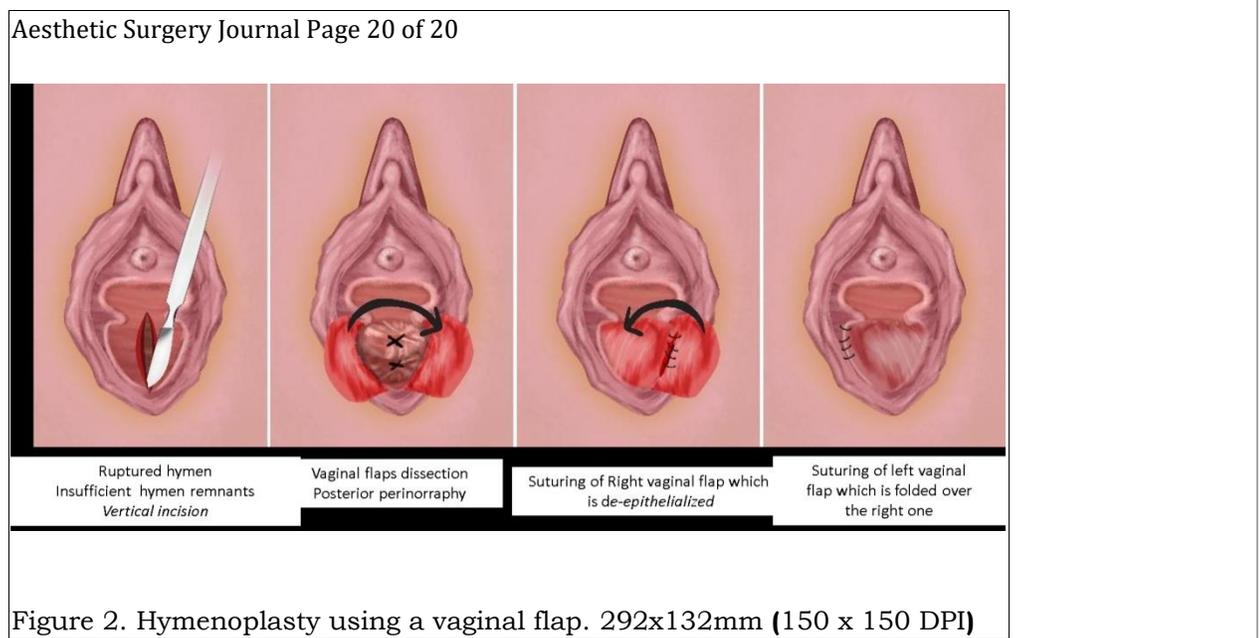
All procedures were performed on an outpatient basis, with an average duration of 25 minutes (range, 10 to 40 minutes). Patients were systematically treated with a combination of antibiotics, metronidazole, and anti-inflammatory drugs.

After the intervention, patients were advised to avoid the following:

- Side or straddle splits
- Increased abdominal pressure
- Bath
- Tampons
- Self-examination to check the integrity of the hymen

- Penetrative sexual intercourse, which could compromise the results

The patients were assessed 15 days post-surgery and then once every three months and within 15 days of their wedding.



Results

A total of 518 patients were underwent hymen restoration, including 227 hymenorrhaphies (42%), 302 hymenoplasties (58%), 204 HLH (39%), and 99 HLV (19%). Of note, 10 patients underwent a second hymen restoration and one patient a third restoration of her hymen. Overall, 529 hymen restorations were performed. Five patients requested to have the hymenoplasty combined with a nymphoplasty.

The average age of the patients was 32 years (range, 18 to 46 years).

The motivations for this type of surgery were variable and included the following: to get married (n = 357, 69%), for a failed relationship or engagement (n = 102 patients, 20%), for a history of rape (n = 15, 3%), for fear of family reprisals (n = 24, 4%), and after voluntary termination of a pregnancy or vaginal delivery (n = 20, 4%).

Aside from two pregnancies that were discovered fortuitously during the first examination, the following conditions were diagnosed: vaginal septum, salpingitis, vulvar condyloma, uterine myoma, and endometriosis.

Failures and Complications

Among the 518 patients, only alone three (0.5%) presented an early complication in the form of active hemorrhage requiring surgical hemostasis.

Of the 227 women who underwent a hymenorrhaphy, no failure was reported, and all the patients who had sexual intercourse within 15 days of the procedure experienced vaginal bleeding.

The following complications were documented among the 204 hymenoplasties using hymenal flaps: five failures (0.025%), 20 cases of wound dehiscence before the wedding (0.1%), five cases of difficult vaginal penetration requiring surgical separation (0.01%), and three cases of hemorrhage requiring surgery due to tearing during vaginal penetration (0.025%).

Of the 99 hymenoplasties using vaginal flaps, only one failure (0.1%) was reported; however, the patient did not follow post-surgical care recommendations. Five (0.05%) of the patients underwent a second procedure to resect tight scars, 10 women (0.1%) reported difficult vaginal penetration requiring surgical resection of the sutures, two experienced vaginal bleeding due to a tear requiring a resumption of the procedure.

No obstetric complications were reported in our patients.

Discussion

Our study on a series of 518 patients who underwent a hymen restoration allowed for the assessment of the different techniques used depending on the context. Additionally, it provided a detailed description of each technique used in the procedure. Short- and long-term follow-up data highlighted the effectiveness of hymen restoration using the techniques described in this report given the low incidence of failure of the technique and the low rate of reported complications.

According to the medical literature, the rate of bleeding after hymen reconstruction surgery varies between 50 and 67%.^{8,10–12} However, these results are not acceptable in certain social contexts. In our study, most of the patients were satisfied with the intervention because nearly all of them who got married bled on their wedding night.

The hymen is a membranous tissue surrounding the external vaginal opening. It has no distinct physiological function in the adult female reproductive system, and its appearance may change with hormonal fluctuations and age. The hymen may become thin and, in some cases, almost transparent. (4) Previous reports showed that only 50 to 60% of women experienced vaginal bleeding during hymen rupture at the first coitus, which occurs probably due to the lack of blood supply. (7)

The integrity of the hymen can be assessed during a physical examination, performed before marriage, or confirmed by the occurrence of vaginal bleeding resulting from a tear in the hymen at the time of the first sexual intercourse.⁴ In addition to penetrating sex, activities such as gymnastics, horse riding, cycling or wearing a tampon can cause the hymen to tear. (4)

The ethics committees of several international medical societies (United States, United Kingdom, France, Canada, New Zealand, Australia, and the World Health Organization) have generally categorized hymenoplasty as a genital cosmetic procedure.⁽¹²⁾

Given the lack of a standardized procedure for hymen reconstruction,^{2,4} investigators have described the following techniques whose main objective was to restore a narrow membranous introitus at the external vaginal orifice: (7,12)

- Simple suturing of the hymen: Several suturing methods are available for a simple and fast reconstruction. (8,12)
- Flap technique: This reconstruction technique uses a simple narrow strip of the posterior vaginal wall, as described by Placik,¹² or four vaginal mucosa flaps. (4)
- Surgical adhesions by simply approximating the free borders of the hymen remnants⁶ or by overlapping and suturing the remnants. (12)
- Reduction of the hymenal lumen by approximation by suture (7,13) or by strapping of the hymenal ring. (11)

Indeed, the hymen can be restored by suturing it immediately after its rupture. Alternatively, a new hymen can be reconstructed by using the remnants of the torn hymen at a subsequent date. Unfortunately, it is challenging to identify the hymen if the tear was not recent. In cases of secondary repair, the typical approach is to use vaginal mucosal flaps, with the newly reconstructed hymen seemingly strong enough to sustain daily activities, but at the same time weak enough to tear during sexual penetration. (4)

Ou et al. used a submucosal suture to create an annular hymenal ring around a Hegar dilator.¹¹ Several suturing methods are available for a quick and easy repair. (8)

Goodman described two techniques. One method involved a reduction of the diameter of the introitus using multiple small diamond-shaped excisions along the edge of the hymenal ring and the other, the most common method, was performed by approximating the identified edges of hymen remnants, followed by “surgical adhesion.” (13)

In the technique described by Goodman,¹³ luminal reduction is accomplished with multiple side-by-side sutures of the hymen fragments using diamond-shaped excisions between the remnants. The surgical adhesion technique results in lumen obstructions due to end-to-end approximation of the hymen fragments.¹²

The techniques of hymen reconstruction using flaps are based on a narrow strip of posterior vaginal wall, which will be dissected for reconstruction. These techniques are based on solid principles of plastic surgery and fulfill the basic objective of replacing "similar tissues with similar ones". The color, texture and thickness practically correspond to the original hymen. These random flaps are robust and reliable due to the excellent blood supply to the vaginal mucosa. (4) A proper reconstruction is necessary for the newly reconstructed hymen to remain intact but weak enough to rupture following penile penetration. If true healing of the squamous epithelium occurs, it may be necessary to free the flap through surgery. (4)

The suture three stratum method described by Wei et al. (10) uses suture layers in three strata, including the internal and external mucosa of the hymen and the submucosal fascia. This technique was used on 125 patients in a Chinese center, and only one patient presented an early postoperative complication in the form of uncontrollable bleeding. (7) However, the results of a study conducted at a Canadian center showed no complication in all the cases that underwent the suture three stratum method. (7,14)

Most authors report only minor complications; however, some mention, without documentation, have reported the risks of excessive hymen repair, including secondary dyspareunia or difficulty in penetration, separation of incisions, absence of bleeding, and serious medical complications. (12)

In the series of cases reviewed by Longmans et al.¹⁵, Ou et al.,⁽¹¹⁾ and van Moorst et al.,⁽⁹⁾ failure to bleed and repair were the only complications reported. Non-surgical methods such as creams containing plant extracts and hydroxyethylcellulose substances have been tried. When applied to the vaginal walls, these products can cause swelling and tighten the vagina. Hymen rupture is simulated by bleeding from the vaginal mucosa due to friction. (4) Other devices have also been used such as the technique of membranes and artificial reservoirs, which involves suturing or placing gelatin capsules filled with a blood substitute inside the vagina to simulate blood loss.

Conclusion

It is extremely important for women planning to get married to eliminate evidence of their sexual experience simply by having "surgical revirgination" in cultures where virginity is highly valued.

Hymenoplasty is controversial and considered to be a socio-cultural surgery and has no medical indication. However, it is interesting in the sense that the most common complication associated with the procedure is wound dehiscence, which is essentially a natural state of the hymen in case of injury.

Surgeons have the obligation of informing their patients that the surgery will cause a significant variation in the morphology of the hymen—the size or diameter of the hymenal ring will not be ideal.

Hymen restoration does not guarantee vaginal bleeding during the first vaginal intercourse. Long-term follow-up in this patient population is limited mainly by the patients' desire for discretion.

The desired result, i.e., bleeding during penetration, is the basis of our techniques, and this can only be achieved with an appropriate indication, good technique, and proper follow-up.

Finally, we confirm the importance of factual sexual and reproductive education to counter the distorted beliefs that misconstrue an “intact hymen” as sign of virginity.

References

1. Usta I. Hymenorrhaphy: what happens behind the gynaecologist's closed door? *J Med Ethics*. 2000;26(3):217-218. doi:10.1136/jme.26.3.217-a
2. Shaw D, Dickens BM. A new surgical technique for hymenoplasty: A solution, but for which problem? *Int J Gynaecol Obstet Off Organ Int Fed Gynaecol Obstet*. 2015;130(1):1-2. doi:10.1016/j.ijgo.2015.04.023
3. Kadiri G. Au Maroc, la virginité à tout prix : « Ils veulent du sang, alors on leur en donne ». *Le Monde.fr*. https://www.lemonde.fr/afrique/article/2017/09/24/au-maroc-la-virginite-a-tout-prix-ils-veulent-du-sang-alors-on-leur-en-donne_5190511_3212.html. Published September 24, 2017. Accessed April 15, 2020.
4. Saraiya HA. Surgical revirgination: Four vaginal mucosal flaps for reconstruction of a hymen. *Indian J Plast Surg Off Publ Assoc Plast Surg India*. 2015;48(2):192-195. doi:10.4103/0970-0358.163060
5. Dridi IB. Les réfections chirurgicales de l'hymen en Tunisie. Des techniques de purification et d'absolution ? *L'Année Maghreb*. 2017;(17):119-132. doi:10.4000/anneemaghreb.3208
6. Prakash V. Hymenoplasty — how to do. *Indian J Surg*. 2009;71(4):221-223. doi:10.1007/s12262-009-0057-9
7. Vojvodic M, Lista F, Vastis P-G, Ahmad J. Luminal Reduction Hymenoplasty: A Canadian Experience With Hymen Restoration. *Aesthet Surg J*. 2018;38(7):802-806. doi:10.1093/asj/sjy023

8. Loeber O. Wrestling with the hymen: Consultations and practical solutions. *Eur J Contracept Reprod Health Care*. 2015;20(2):128-135. doi:10.3109/13625187.2014.984834
9. Van Moorst BR, van Lunsen RHW, van Dijken DKE, Salvatore CM. Backgrounds of women applying for hymen reconstruction, the effects of counselling on myths and misunderstandings about virginity, and the results of hymen reconstruction. *Eur J Contracept Reprod Health Care Off J Eur Soc Contracept*. 2012;17(2):93-105. doi:10.3109/13625187.2011.649866
10. Wei S-Y, Li Q, Li S-K, Zhou C-D, Li F-Y, Zhou Y. A new surgical technique of hymenoplasty. *Int J Gynaecol Obstet Off Organ Int Fed Gynaecol Obstet*. 2015;130(1):14-18. doi:10.1016/j.ijgo.2014.12.009
11. Ou M-C, Lin C-C, Pang C-C, Ou D. A cerclage method for hymenoplasty. *Taiwan J Obstet Gynecol*. 2008;47(3):355-356. doi:10.1016/S1028-4559(08)60143-6
12. Placik O. Female Cosmetic Genital Surgery - Concepts, classification and techniques. :304.
13. Goodman MP. Female Genital Cosmetic and Plastic Surgery: A Review. *J Sex Med*. 2011;8(6):1813-1825. doi:10.1111/j.1743-6109.2011.02254.x
14. Cook RJ, Dickens BM. Hymen reconstruction: ethical and legal issues. *Int J Gynaecol Obstet Off Organ Int Fed Gynaecol Obstet*. 2009;107(3):266-269. doi:10.1016/j.ijgo.2009.07.032
15. Logmans A, Verhoeff A, Raap RB, Creighton F, van Lent M. Should doctors reconstruct the vaginal introitus of adolescent girls to mimic the virginal state? Who wants the procedure and why. *BMJ*. 1998;316(7129):459-460.