

## COUCHING TECHNIQUES FOR CATARACT TREATMENT IN OSOGBO, SOUTH WEST NIGERIA

M. A. ISAWUMI, O. U KOLAWOLE and M. B HASSAN

Department of Ophthalmology, College of Health Sciences, Ladoke Akintola University of Technology and Teaching Hospital, Osogbo, Nigeria.

*Corresponding Author: Dr. Michaeline A. Isawumi*

*E mail: [misawumi@gmail.com](mailto:misawumi@gmail.com).*

*Conflict of Interest: None declared*

### SUMMARY

**Background:** Couching is still being practised in developing countries including Nigeria despite its adverse effects on vision.

**Objectives:** To find out the different techniques of couching, highlight the unacceptable poor visual sequelae and assess knowledge, attitudes, and practices of subjects.

**Settings and Design:** Clinic based and prospective observational study.

**Methods and Material:** Structured interview and clinical examination of consecutive patients was used to obtain information.

**Results:** Fifteen subjects and 20 eyes of 9(60%) males and 6(40%) females were studied. Age range 60 -90 years and mean 72.4±8.0. Commonest presenting complaints were "I cannot see properly/clearly" 4(26.7%) and "I want to do my second eye so I can see better" 3(20%). Presenting Versus (vs.) Corrected visual acuity (VA) was 75% vs 60% blind, 55% vs 45% low vision, and 0% vs 10% normal vision,  $p=0.032$ . Friends and neighbours mostly introduced subjects to couching (26.7% each). Commonest methods involved using sharp objects/needling 45% and blunt/grooving/rocking methods (30%). Subjects assumed "supine" position 75% of time. Eighty five percent of eyes were done at the coucher's. Procedure was painful in 73.3%. Only 5 eyes (25%) maintained vision for >10years. Thirteen (86.7%) said "no" to a repeat procedure and 93.4% would advice against couching.

**Conclusions:** Couching methods used were very crude and archaic with attendant poor quality of vision and dissatisfaction. Public education, affordable and accessible cataract surgical services taken to the rural communities could gradually phase out couching.

**Keywords:** Couching, Methods, Visual sequelae, Nigeria

### INTRODUCTION

Couching is an ancient method of cataract treatment whereby the cataractous lens is dislocated from the visual axis into the vitreous cavity. It describes the first documented way of treatment of cataract. It was thought to have been first invented in India 800 years B.C. during the Sushruta period.<sup>1</sup> Couching is known to be an archaic method which is dangerous to vision, causing many painful and vision-reducing complications.<sup>2</sup>

Studies have shown that this method of cataract extraction has been practiced all over the world since then. From India to China<sup>3</sup>, Europe<sup>4</sup>, the Middle East<sup>5</sup> and Africa; particularly the west African sub-region.<sup>6</sup> Since then, modern techniques of surgery have evolved through early ICCE to Phacoemulsification and the Blumenthal technique of manual small incision cataract surgery (MSICS) thought to be invented by an Israeli surgeon called Blumenthal.<sup>7-9</sup>

Visual rehabilitation with intraocular lenses is the rule following surgery these days. Despite these documented facts, couching is still being practised in Nigeria by quacks, especially in the north where the sharp and the blunt methods are used.<sup>10</sup> Furthermore, observation in the clinic has shown that most patients undergoing couching come down with poor vision. Complaints of discomfort are also usually associated.

Very few studies have been carried out on the methods of couching in Northern Nigeria and none in the south. This study aimed to show that couching techniques have attendant unacceptable sequelae both to the person and to vision, and therefore should be discouraged. The objectives included finding out the different techniques of couching and the possible adverse effects on the quality of vision of the patients; and the knowledge, attitudes, and practices of the subjects concerning couching. The findings are expected to help improve our cataract delivery services.

## METHODS

The study was carried out in Ladoko Akintola University of Technology Teaching Hospital (LTH) eye clinic, in Osogbo, Osun State of Nigeria. This clinic serves the surrounding 4 states with a minimum population of 2 million each. It is located in the tropical rain forest belt of south-western Nigeria. The people are mainly subsistent farmers. The study design involved an observational prospective qualitative and clinical study of twenty couched eyes of fifteen patients seen over a 3-year period between 2008 and 2010. The subjects comprised the attendees of LTH eye clinic in Osogbo metropolis, Osun State of Nigeria. Consecutive new patients registered and seen at LTH eye clinics who had undergone couching after ocular examination between 2008 and 2010 were included in the study.

Any patient not registered with the clinic above, with any history of traumatic lens dislocation or surgically-induced posteriorly dislocated lens, and registered outside the study period was excluded from the study. All those who denied history of couching were also excluded. Informed consent was obtained from the subjects while ethical clearance was obtained from the LTH Ethical Committee. Information on demographic variables such as age, sex, and occupation were obtained. The occupation was used to estimate the economic status. Presenting visual acuities (VA) were checked using the illuminated Snellen's chart.

Patients were made to read from a distance of 6 metres one eye after the other. Those that had VA less than 6/9 and did not improve with pinhole were tested with +10 lenses or with their aphakic glasses. Anterior and posterior segment examinations were then carried out. The direct ophthalmoscope easily picks the hypermetropic eye and can also see the dislocated lens in the presence of a dilated pupil. The Slit lamp biomicroscopy was used to confirm scars of couching, cornea clarity, anterior chamber activity, presence of iridodonesis and absence of lens from the pupil. Binocular Indirect Ophthalmoscope (BIO) was used to confirm a couched eye (dislocated lens into vitreous).

This procedure was carried out with the patients seated bent backwards at an angle of 45° on the ophthalmic chair. Refraction was later done to determine the exact error of refraction, prescribed for the corrected visual acuity. Ultrasonography or other imaging technologies were not done because all of the dislocated lenses were easily seen lying within the vitreous cavity. The intraocular pressures were checked. Further, each patient was asked whether he or she had undergone couching or had trauma for exclusion. A semi-structured questionnaire was then used to obtain

information about why, where and how the couching was performed. What were the reasons for presentation to the clinic? Who introduced the patient to couching, how long did it take the patient to see and maintain vision afterward? Was the procedure painful or painless, and how long did it last? Would he or she recommend it for any other person? How was the patient's vision affected? Thereafter, refraction was done and glasses prescribed for those with improved vision. The result of refraction was recorded as the corrected visual acuity.

### Data Management

Data was analysed using the SPSS version 16 software. Summary statistics of proportions and percentages were used for qualitative variables and mean and standard deviations (SD) for quantitative variables. Cross tabulations were carried out with p-values and Chi squares for statistical significance where necessary.

## RESULTS

Fifteen patients were interviewed and 20 eyes were examined. There were five bilateral, five left unilateral and right unilateral couched eyes. There were 9 (60%) males and 6(40%) females giving male: female ratio of 3:2. The age ranged between 60 and 90 years with a mean of 72.4±8.0 years. The modal age group was that of the 60-65 years. The age-group versus sex distribution showed no significant difference (Chi square 4.444, p= 0.217). The occupation showed that they were mostly farmers 6/15(40%) and traders 4/15 (26.7%). Others were artisans 13.3% and a retiree 6.7%. Most common presenting complaints was 'I want glasses to see better' 7(46.7%), followed by 'I cannot see clearly or properly' 4(26.7%), 'I want to 'do' my second eye so that I can see better' 3(20%), and 'I want a new pair of glasses' in 1 (6.7%).

**Table 1** Presenting visual acuities by corrected visual acuities of 20 couched eyes in SE Nigeria according to WHO categories of visual impairment

Presenting Visual Acuities	Corrected Visual Acuities				Total %
	6/6-6/19	6/24-6/60	<6/60-3/60	<3/60-NPL	
6/24-6/60	1(50.0)	1(50.0)	0	0	2(10.0)
<6/60-3/60	1(33.3)	1(33.3)	1(33.3)	0	3(15.5)
<3/60-NPL	0	2(13.3)	1(6.7)	12(80.0)	15(75.0)
<b>Total (%)</b>	2(10.0)	4(20.0)	2(10.0)	12(60.0)	20(100.0)

Presenting visual acuities in the eyes showed 75% blind and 0% with normal vision. A significant number still remained blind after corrections (Chi square value = 13.833, p value = 0.032) according to the WHO categories of visual impairment (Table 1).

Reasons for couching included 'did not know where else to go for treatment' in 5/15 (33.3%), 'cost' 3/15(20%) and others.

These reasons by sex distribution showed no significant difference,  $\chi^2 = 7.31$ ,  $p = 0.195$  (Table 2).

**Table 2** Sex distribution of 15 couched eye patients in SW Nigeria

	Reasons for couching						Total%
	For less cost	Advised by a couched person	Does not know where else to go	Fear of surgery	Distance	Nobody to accompany	
Sex							
Male	2	0	5	1	1	0	9(60.00)
Female	1	1	0	2	1	1	6(40.00)
Total	3(20.00)	1(6.70)	5(33.3)	3(20.0)	2(13.3)	1(6.7)	15(100.0)

$\chi^2 = 7.31$ ,  $p = 0.19$

Seventeen (85%) eyes were couched at the couchers' homes while 3(15%) were done at the subjects' homes. The methods of couching mostly involved the use of sharp objects/needling in 9 eyes (45%). The positioning during the procedure was supine for 15 eyes (75%) and sitting for 5(25%).

The duration of surgery in each eye ranged mostly between 4 – 6 minutes in 9 eyes (45% CI, 23.2-66.8),

1-3 minutes in 7 eyes (35.0% CI, 14.1-55.9) and 7-10/>10-15 minutes each in 2 eyes (10.0% CI, -3.2 - 23.1). The procedure was painful in 11 subjects (73.3%), with no significant difference among the sex ( $\chi^2 = 0.227$ ,  $p = 0.634$ ) (see Table 3). The pain persisted for 1-4 weeks in 8 eyes (40%) and 1-7 days in 6 (30%) and 1-6 months in another 6 (30%) eyes after the procedure.

**Table 3** Pain perception and desire for repeat procedure among 15 subjects in SW Nigeria

	SEX		
	Males n=9	Females n=6	Total
How was the procedure?			
Painful	7(63.60)	4(34.4)	11(73.3)
Non painful	2(50.0)	2(50.0)	4(26.7)
		$\chi^2 = 0.227, p = 0.634$	
Could you have a repeat procedure?			
No	9(69.2)	4(30.8)	13(86.7)
Yes	0	2(100.0)	2(13.3)
		$\chi^2 = 3.462, p = 0.63$	
Total	9(60.0)	6(40.0)	15(100)

Time for vision to be regained after the procedure varied from immediately in 5 eyes(25%), within 1-2 minutes in 9(45%), 3-5 minutes in 3 (15%), 1-6 hours in 1(5%), and no change in vision in 2(10%). Vision was maintained in 5 eyes (25%) for more than 10 years, in 4/20(20%) for 2-5years, in 3/20(15%) each for up to 3 months, 6 months and 1 year respectively.

Only 1/20(5%) of the eyes had the least period for maintaining vision before going blind at 1 week, while the maximum period was 6 -10 years in 5% of eyes.

Thirteen (86.7%) of the subjects said 'no' to a repeat procedure while only 2(13.3%) said 'yes' to a repeat procedure with no statistical significance among the sexes,  $\chi^2 = 3.462$ ,  $p = 0.63$ , (Table3).

The procedure was cost effective in 18 (90%) eyes and not cost effective in 2(10%) eyes. Eleven (73.3%) were unhappy with the outcome of the procedure while only 4 (26.7%) were happy with the outcome in terms of discomfort and satisfaction. Their daily activities were affected negatively in 70%, positively in 25% and no change in 5% of cases.

Fourteen (93.4%) of the subjects had regrets and would advice others against going for couching. Only 1 (6.7%) would advice others to go for couching. The result showed frequency distribution of IOPs as <10mmHg = 6(30%), 10-21mmHg = 12(60%), >30mmHg and > 40mmHg =1 (5%) each. The group with >30mmHg and >40mmHg had visual acuities of < 3/60.

## DISCUSSION

The limitations in this study could be addressed as comprising: studying only those subjects that presented to the clinic, exclusive of others who perhaps would have had better visual presentations and outcome; not using other non-invasive investigative tools to rule out non-lens lesions in the vitreous; and the possibility of there being a recall bias, when the subjects were responding to the length of time the procedure took.

In this study, more males were seen with couched eyes even though the difference was not statistically significant. This trend has been noticed in previous works.<sup>11</sup> The modal age range of 60 to 90 years with the occurrence of senile cataract is not unexpected. Their occupation revealed that most of them were of the low-income group as 2/5<sup>th</sup> of them were farmers and over 1/4 of them were petty traders. Similar studies revealed that most subjects with couched eyes are usually of the low income group or rural dwellers.<sup>12</sup>

Subjects mostly presented with poor vision and inability to see, as about two-thirds of the eyes presented as blind, and over 50% presented with low vision and none with normal vision. In particular, they wanted to obtain glasses, which they assumed would make up for their poor vision. Only one of the subjects had a pair of glasses that he wanted to change for a new pair. This tends to show that the couching procedure they had undergone was not successful in terms of their visual outcome and uncorrected refractive errors.

Interestingly, there was no pre-existing ocular comorbidity in the presenting eyes. Following examination and aphakia correction, the number of blind patients reduced by 5% while 10% regained normal vision. Similarly seen in the Nigerian national survey, majority (73.3%) were blind at presentation and 42.6% still remained blind after correction.<sup>12</sup> The commonest means of introduction to couching was through friends and neighbours followed by children and relations respectively.

This shows communal relationship and care for one another in an African society. Could it be deduced that most of the 'referrers' had poor visual outcome (as found in this study) and that is why only 2 subjects were motivated to go for couching?

The commonest reason for couching was ignorance as a third of the subjects claimed they did not know where else to go for treatment. 'Cost' was second among 20% of the subjects.

Similar results including, long distance from hospital facility, had been documented in other studies.<sup>13-16</sup>

More than 75% of eyes were couched at the couchers' place. This trend seems to inform us of the low level of awareness of cataract treatment in this catchment area and the need for us to embark on public education programmes about the disadvantages of undergoing couching. The fact that some of the couchers actually take their services to the people at home is a challenge to the ophthalmologists and other eye care workers. This means that cataract services should be taken to their doorstep. Mobile clinics and screening camps such as was done in India or other places should be organized for the majority of the rural dwellers.<sup>17</sup>

The surgical camps would then be organized either at a nearby hospital or by transporting those in need of surgery to the base hospital where adequate surgical facilities would be available in order to have good visual outcome. Having good visual outcome will serve as motivation for cataract surgery for the populace. Reaching out to the rural communities would reduce cost of surgery (both direct and indirect cost), remove barriers of distance and not having people to accompany them as have been documented previously.<sup>18</sup>

There were four methods of couching found. The use of sharp objects/needling method (sharp technique), followed by the grooving/rocking method carried out with the lids closed (blunt method) were the commonest types seen in this study. These findings have similarly been reported.<sup>18</sup> However, the sharp technique was the only technique used in another study.<sup>17</sup> The herbal method which was the fourth involved the use of herbal eye drops. They probably contain some enzymes which lyse the lens zonules, weaken them and make the lens susceptible to easy dislodgement from its position.

This possible proposed process seemed to have made some of the couchers use the herbs in combination with the previous two methods to allow for easy dislodgement of the lens. This was in contrast to what was reported that the use of the herbal eye drops were to serve as anaesthetic agents.<sup>19</sup> Perhaps the herbs have a combined effect of lysis and anaesthesia.

The position assumed during the procedure was mainly supine in three quarters of the procedure. This appears logical enough as the subject will obviously be more comfortable in a lying down position during the procedure.

This however was a contrast to what was recorded in northern Nigeria where the subjects assumed the sitting position throughout.<sup>19</sup> The duration of couching was very short with the most frequent range of time

between 4–6 minutes in almost half of the eyes, closely followed by the 1-3 minutes duration. An average of 7 minutes for the shortest time had also been previously recorded.<sup>19</sup> What does this tell us? It only highlights the fact that the procedure could be a very fast-one or that the couchers are fast surgeons. The delivery of cataract services in a timely and efficient manner, and shorter surgery time is another area of challenge to the Ophthalmologist in which we have to improve upon. This short duration of couching is probably one way it attracts patients. But is it really worth it? Further results showed that in as much as they regained their sight from immediately among 1/4 and almost 1/2 in the first 2 minutes and to as long as within 6 hours, the maximum period of maintaining vision before going blind ranged between 6-8 years in only one eye. In five cases there was no change or improvement in vision compared to what it was (VA <3/60) before couching. However, a quarter of the eyes did not go blind as at time of assessment. In comparison, cataract surgery and visual outcome is usually satisfactory if done by an expert, and if there are no pre-existing co-morbidities like optic atrophy, glaucoma, corneal opacities etc.<sup>20</sup> Complications could also be taken care of if and when they occur in order to improve visual outcome.

Almost three quarters of the subjects confirmed that the procedure was painful. The pain persisted mostly within the first one month and in some cases for up to 6 months. In contrast most of the procedures observed in Northern Nigeria appeared painless according to the subjects.<sup>19</sup> This was so, whether the supposed anaesthetic herbal drops were applied or not. The authors think this was not the true situation because in the North of Nigeria, the tradition (especially women in labour) is never to show or express any sign of pain. One can imagine the unbearable painful discomfort these people go through. This is also evidence of the ancient method of surgery without anaesthesia, which should be discouraged. The procedure was thought to be cost effective in 90% of cases. This seemed to be a contrast to the findings in Yemen where it was found that couching was not cost effective.<sup>5</sup>

This notwithstanding, about 90% of the subjects regretted going through the procedure and would not want a repeat procedure. They also would advise others against couching, except for one the subject who would, because she was seeing well.

Comparatively, a lesser number was interested in advising others against couching in Burkina Fasso.<sup>16</sup> Incidentally, she was the only subject that had an aphakia spectacle correction and came with the complaints of wanting to change her glasses. All the others had no correction.

Those in whom vision could be improved with spectacles were given aphakic glasses.<sup>12</sup> Even though the procedure was agreed to be cost effective in 18 (90%) eyes, 73.3% were unhappy with the outcome in terms of discomfort and satisfaction. Furthermore, daily activities were affected negatively in 70% of cases. These reflected poor quality of life for these patients.

## CONCLUSION

Couching is still common in our communities despite the advances in modern medicine. Its archaic surgical techniques, attendant havoc on vision and dissatisfaction of patients despite its assumed lower costs, and fast services should be discouraged as much as possible. This can only be achieved by public education. Cataract services can be brought within reach of the poor either by government subsidy in the hospital or sponsorship of regular eye camps by NGOs and other well to do individuals in the country. Lastly the eye care professionals in the cities could have a community-based practise incorporated into their routine monthly activities or running of a monthly mobile clinic.

## REFERENCES

1. Roy PN, Mehra KS, Deshpande PJ. Cataract surgery performed before 800 B.C. *Br J Ophthalmol.* 1975;59(3):171.
2. Zegers RH. The eyes of Johann Sebastian Bach. *Ned Tijdschr Geneesk.* 2005 Dec 4;149(52):2927-32.
3. Fan KW. Couching for cataract and Sino-Indian medical exchange from the sixth to the twelfth century AD. *Clin Experiment Ophthalmol.* 2005;33:188-90.
4. Bieganowski L. Ophthalmology in Byzantium between the 4th and the 7th century. *Klin Oczna.* 2005;107:177-81.
5. Bamashmus M A. Traditional Arabic technique of couching for cataract treatment in Yemen. *Eur J Ophthalmol.* 2010;20:340-4.
6. Schémann JF, Bakayoko S, Coulibaly S. Traditional couching is not an effective alternative procedure for cataract surgery in Mali. *Ophthalmic Epidemiol.* 2000; 7:271-83
7. Basic and Clinical Science Course. Lens and Cataract. *American Academy of Ophthalmology* 2008-2009: 94.
8. Ravi T, Kuriakose T, George R. Towards Achieving Small-Incision Cataract Surgery 99.8% of the Time. *Indian J Ophthalmol* 2000; 48: 145-51.

9. Sinha R, Agarwal P, Kumar C. Small incision cataract surgery: Review of journal abstracts. *Indian J Ophthalmol* 2009; 57:79-82.
10. Goyal M, Hogeweg M. Couching and Cataract Extraction- A clinic based study in Northern Nigeria. *J Comm Eye Health*. 1997; 10:6-7
11. Ademola-Popoola DS and Owoeye JFA. Traditional Couching for cataract treatment: A cause of visual impairment. *WAJM* 2004; 23: 208-10
12. Gilbert CE, Murthy GV, Sivasubramaniam S, Kyari F, Imam A, Rabiou MM, Abdull M, Tafida A. Couching in Nigeria: prevalence, risk factors and visual acuity outcomes. *Ophthalmic Epidemiol*. 2010;17:269-75.
13. Omoti AE. Complications of traditional couching in a Nigerian local population. *West Afr J Med*. 2005;24(1):7-9.
14. Mpyet C, Dineen BP, Solomon AW. Cataract surgical coverage and barriers to uptake of cataract surgery in leprosy villages of north eastern Nigeria. *Br J Ophthalmol*. 2005;89:936-8.
15. Rabiou MM. Cataract blindness and barriers to uptake of cataract surgery in a rural community of northern Nigeria. *Br J Ophthalmol* 2001; 85: 776-780.
16. Meda N, Bognounou V, Seni E, Daboue A, Sanfo O. Cataract in Burkina Faso: factors of choice between modern and traditional surgical procedures. *Med Trop (Mars)*. 2005;65:473-6.
17. Gogate P, Kurkarni AN. Comparison of cataract surgery in a base hospital and in peripheral eye camps. *J Comm Eye Health* 2002; 15: 26-27
18. Vanneste G. Breaking down barriers: How to increase the cataract surgical rate. A practical guide for eye units in developing countries. *CBM* 2001; Chapters 2 and 3. 10-25.
19. Mahmoud AO. Traditional operative couching is not a safe alternative procedure for cataract surgery in Northern Nigeria. *Saudi Med J*. 2005;8: 30-32.
20. Isawumi MA, Soetan E, Adeoye A, Adeoti CO. Evaluation of cataract surgery outcome in S Western Nigeria. *Ghana Med J*. 2009;43:169-74.✉