PRACTICE OBSERVED

Practice Research

Eye screening in general practice with the Arden grating test

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Few general practitioners are likely to have both the skills and the equipment necessary for full examination of their patients' eyes. Snellen charts test only visual acuity, and there is still a need for a simple screening procedure that indicates which patients should be referred to a specialist clinic.¹

The Arden grating test is a test of visual function that uses sine-wave gratings to measure the sensitivity of the eye to contrast. In 1976 these gratings were reproduced on plates that could be made up in the form of a book.² Each eye is scored separately, using a set of six standard plates: the point at which a contrast is detected is marked against the scale on the side of the grating. Scores are affected by many factors, including the patient's age, the number and form of the plates, illumination conditions, and diseases from which the patients may be suffering.³

The Arden grating test was believed to be suitable for screening in general practice. It was said to be little influenced by refractive errors, to pick up glaucoma and other sight-threatening diseases in their earliest stages, and to be useful in the routine monitoring of patients with diabetes. Its place in the surgery depended therefore on three considerations: how easy it was to use, and whether or not the false-positive and false-negative rates were low enough to make its adoption worthwhile.

Preliminary answers to the first two of these considerations could be obtained by supplying several general practitioners with the test and having them refer all patients with abnormal scores for full eye examination. A small trial along these lines was therefore designed in co-operation with Professor Arden and Moorfields Eye Hospital. The problem of the false-negative rate was unlikely to be elucidated by this arrangement, since it

was thought that not enough patients with normal scores would be willing to accept an appointment for the Moorfields clinic. A detailed report of the trial has been published elsewhere,⁴ but it is written from the perspective of the clinic in which the patients were seen and its conclusions are based on the Arden grating tests and Snellen tests which were performed in the hospital. It deals with 140 patients, only 129 of whom were in the trial; it includes eight who were referred with normal scores and three who did not come from the general practitioners involved. These differences affect the author's approach and results; therefore it seems worthwhile to present the findings in a way more relevant to general practice, where the interest centres on the defects discovered in patients whose abnormal scores were discovered under normal surgery conditions.

Methods

Seven practices associated with the department of general practice of this medical school expressed an interest in using the gratings. Doctors from these practices were taught how to use them by Professor Arden and were given books of plates to take back to their surgeries. A special clinic was set up in Moorfields Eye Hospital to permit rapid referral. Forms were designed for patients investigated further or followed up, and in the clinic a technician was available to check that illumination in the surgery reached the proper level of 130-150 lux/m², though it was found that a 60-watt pearl bulb in an Anglepoise lamp, 26 inches (66 cm) above the desk, was satisfactory.

The general practitioners' task was to find people with abnormal scores rather than to screen particular groups of patients. Abnormal scores were more likely to occur in patients who were elderly, hypertensive, diabetic, had a family history of glaucoma, or who were taking drugs thought to affect the eye; it was reasonable therefore that the doctors should tend to test such patients rather than select at random, but no constraints were put on the doctors and no patients were excluded from testing on clinical grounds.

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Patients with diabetes and abnormal scores were referred to the Hammersmith Hospital rather than to Moorfields. Referral to the special clinic was arranged only if the doctor would not otherwise have referred them elsewhere. An abnormal score using the Arden test was defined as a total score of 78 or more for either eye, a difference of 10 or more between the two eyes on any of the plates, or a score of 17 or more on any one plate with either eye. Patients with reading glasses kept them on while being tested.

The feasibility of delegating the testing to unqualified practice staff was explored in two ways: in one surgery some of the receptionists were trained by the doctors, and a lay assistant was recruited to visit some of the other practices once or twice a week to test patients who had agreed to this at an earlier normal consultation.

Results

Of the 129 patients with abnormal scores referred to the clinic at Moorfields, 52 were under the age of 60—half of these were in their fifties—and a further 46 were in their sixties. Full eye examination, which normally included history, an Arden test, Snellen visual acuity test, with refraction if it was worse than 6/6, ocular motility, visual fields, slit-lamp inspection, and fundoscopy under mydriasis, revealed definite defects (as judged from the letters sent to the referring doctors) in 95 of the 129 (74%). The severity or significance of these defects varied considerably.

Minor surgery for conditions not related to the Arden test was performed on two patients—one for entropion and one for a meibomian cyst. Two patients with normal eyes were sent to a specialist to exclude a neurological cause for the abnormal score. Twenty-six (20%) were referred within the hospital for further investigation or for follow-up (table). Four patients whose need

abnormal finding was usually implied in the wording. The Snellen visual acuity reached 6/6 bilaterally in 17 (6%) bilaterally in another three. For two patients the Snellen score was not mentioned, and in the remaining 18 the acuity of at least one eye was worse than 6/6.

Discussion

Weatherhead calculated that if the criteria for an abnormal score were reset to a total score of 80 or more for either eye, a difference of 13 or more between the two eyes on any of the plates, or a score of 17 or more on any one plate, under clinic conditions, at least 95% of the abnormal eyes would have been detected. Having tested each patient's visual acuity with Snellen charts, he showed that a score of 6/5 was necessary to achieve the same detection rate, at the expense of a significantly poorer ratio of false-positives to false-negatives on his own Arden grating tests.

It is, as usual, a matter of opinion whether or not these findings suggest that the test would be a worthwhile addition to the procedures used in primary care. Some kind of action resulted from 48 of the referrals (37%) in addition to the relief that many of the remaining patients must have experienced when told that their eyes were healthy.

The Arden test, which takes 5-7 minutes to perform, was practical in the surgery. No equipment apart from the plates is required, though several practices had to buy an Anglepoise lamp. It was simple to train unqualified staff to use the gratings, and there was no indication that their findings differed from those of the doctors.

Conclusions

The Arden grating test plates are very expensive to produce, and a larger study would be needed before their adoption could be recommended. The question of the false-negative rate remains. If it is low, this would make the test useful regardless of the false-positive rate. There are occasions when it would be valuable to be able to reassure a patient, on the basis of a normal score, that a specialist opinion is not necessary.

A study to determine the false-negative rate would not be easy to carry out from general practice. It would be simpler in an occupational health setting, perhaps within the premises of a large firm which could also accommodate an ophthalmologist and the equipment required for full examination of the eye. It is to be hoped that someone will carry out such a study.

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Details of 26 cases investigated further or followed up

Problem	Procedure	No of cases
Abnormalities of macula	Fluorescein angiography	10
Cataracts	Operation	3
Need for refraction complicated by other eye disease		3
Glaucoma	Treatment	2
Family history of glaucoma	Visual field checking and tonometry	2
Chronic angle-closure glaucoma	Treatment	2
Chronic keratitis	Treatment	2
Central retinal vein occlusion	Treatment	2
Lamellar hole at fovea with macular membrane	Investigation	2
Diffuse peripheral fundal pigmentation	Electro-oculogram, electroretinogram, and optokinetic	1

for surveillance was definite but not immediate (two with disease of the macula and two with lens problems) were invited to return when necessary but not given an appointment, and 14 (11%) were advised to visit an optician. In the remaining 47 patients (36%), the defect was judged to require no further action or simple advice only. More than half of them had opacities in various parts of the lens and a quarter had lesions in the macula. Multiple defects were common.

Most of the letters to the general practitioners commented on the results of Arden tests carried out in the clinic. For 27 (21%) they were within normal limits, but for 88 (68%) they were again abnormal; for 14 (11%) they were not tested, but an

Sex Problems in Practice

Dealing with fear of failure

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Failure can be defined only in relation to success, and if our patients' notion of success is unduly narrow or unrealistic this can feed directly into the vicious cycle caused by fear of failure shown in the diagram. One aspect of treatment is helping couples redefine for themselves a broader and more realistic concept of "normal," "successful" sex. A specific treatment too that may help this process is the "ladder concept," which I have evolved over the years with the help of my patients. This helps the couple to look at "success" in terms of sharing pleasure rather than in "performing" and reaching goals.

Ladder concept

A ladder with six rungs, resting on the ground, is used as the basis for discussion. The ground and each rung of the ladder are defined in terms of the intensity of physical pleasure experienced and the changes occurring in the genital region with increasing sexual arousal (table). Described in terms of this ladder, the notion of "successful" sex held by so many couples with sexual

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problems is that each partner has to climb the ladder at the same rate and arrive at the top together. This view places the emphasis on performance and goals rather than on sharing pleasure. By using the ladder as a framework for discussion, the couple can begin to review their ideas of what for them could constitute sexual "success." It is suggested that if they so choose they could consider that (a) the pleasure they experience on any given rung of the ladder can be valued in its own right and shared with their partner, without necessarily progressing to higher rungs every time; (b) a mutually satisfying sexual experience need not demand that both partners progress up the ladder at the same pace, always arriving at the top together; (c) that orgasm is not necessarily essential for individual satisfaction, as a problem by the couple.

The ladder concept

	Feelings	Genital changes
Ground level	No interest or pleasure in physical contact	None
Rung 1	Physical and emotional pleasure while cuddling without genital stimulation	None
Rung 2	Feelings above heightened and early genital awareness	None or minimal
Rung 3	Moderate sexual arousal	Partial erection
Rung 4	Strong genital sexual response not felt to be essential	Full lubrication
Rung 5	Intense sexual arousal with physical and emotional discomfort if orgasm does not occur	As above
Rung 6	Orgasm	As occur with orgasm

until rung five is reached. It does appear, however, that the drive for orgasmic release is greater in men than women, possibly determined both by cultural factors and intrinsic male-female differences. This may, but need not, be perceived as a problem by the couple.

With two ladders drawn on a piece of paper, they are asked to examine the many possible options for shared pleasure. For example, a woman on rung two can still find intercourse enjoyable (preferably using K-J jelly to compensate for her own lack of lubrication), if it is simply regarded as a cuddle with a few extra square centimetres of skin contact—that is, penis and vagina. This usually requires a shift in attitude to one that accepts that neither has failed if they do not move further up the ladder on every occasion. As another example, if a man is at rung five while his wife is fixed at rung one she can still masturbate him to orgasm with mutual satisfaction, if not equal levels of intensity of pleasure; alternatively if the (or he) is at ground level pleasure can still be shared if he masturbates himself (or herself), as long as it is beside each other rather than on their own in separate rooms, so that their pleasure can be shared. Success in the latter instances depends, of course, on both partners accepting masturbation as a healthy means of sexual expression, but few reject this idea when they see how such attitudes can

cater for the varying needs of each partner in a way that minimises the chance of failure and eliminates destructive performance pressures. If, however, any one pattern of activity predominates to the exclusion of others desired, such as a rung one-five combination, this would indicate that their problem has been insufficiently resolved.

The ladder is also useful because it provides the couple with a common language which facilitates clear communication. There are, however, certain concerns relating to the ground and rung two that are consistently raised by couples during discussion of the ladder concept.

THE GROUND

Many couples say that in the past if A was on the ground while B was, for example, at rung four, such lack of interest displayed by A would probably be assumed by B, correctly or incorrectly, to be a personal rejection. It can be shown, however, that when the communication skills described in the previous article are put into practice, this problem can be avoided. Since, hopefully, conflict will already have been dealt with as soon as it arose or was suspected, each can then trust that if the other does not desire physical contact this is because of factors external to their relationship and not because of unexpressed or unresolved interpersonal conflict. Even if this is still suspected at the time of a sexual approach, it can be immediately checked out so that either reassurance can be given or previously unexpressed feelings can be brought out into the open and discussed.

RUNG TWO

Intercourse cannot take place for the man at rung two, but it can for the woman. This has often been the typical pattern before help was sought for the problem, but the woman has not been able to appreciate the pleasurable rung two sensations, or valued them in their own right, because she has been too preoccupied with anxiety about whether or not she will become more highly aroused. On the other hand, some women have specifically stated to their partners that on occasions this can be a very enjoyable experience without necessarily becoming any more highly sexually aroused. Typically, however, the man has refused to accept this, feeling that he has "failed" because he has not brought her to orgasm. This in turn can quite needlessly also leave the woman feeling a "failure." What few people seem to realise is that no man can "give" a woman an orgasm or vice versa. All any person can do is give the right stimulation to their partner to enable them to have their own orgasm. Orgasm requires the ability to "let go" and "give up control" of the body's responses to pleasurable stimulation, and only that person himself or herself can ultimately be responsible for letting this happen. Certainly no one else can do this for them.

Sensate focus

Another treatment tool that can be used to help couples break out of the vicious cycle of fear of failure is based on the concept of sensate focus as described by Masters and Johnson.⁵ It is best used in conjunction with education, teaching communication skills, and discussion of the "ladder concept." Its diagnostic value in highlighting those blocks to sexual responsiveness specific to each couple can be as great as its treatment value. There are two stages in this procedure, throughout which a complete ban on intercourse is imposed to remove for the time being any possibility of sexual failure, which is usually perceived only in relation to intercourse. In this way, a situation is created in which the couple are more readily able to appreciate the tactile, gentle, sensual, and emotional feelings experienced at rungs one and two of the ladder. It is out of these feelings that stronger ones grow, leading to mounting sexual arousal and

orgasm (given the continuity of appropriate stimulation). By the time help is sought, many couples have lost the ability to experience such pleasurable feelings, largely because any form of touch by this time usually signals anticipated intercourse, which in turn will lead to yet another failure. These forms of physical contact have usually been avoided for often years, or if it happens it is seldom really enjoyed.

FIRST STAGE

In the first stage the couple is asked to set aside three evenings or other periods of time in which they can be alone together for at least two hours. Lack of such deliberate planning in the past may well have contributed to the sexual problem, but it is often needed because of the busy lives led by most people. They are asked to take it in turns to "set the scene," using anything, such as a candlelit dinner or especially favoured music, which for them creates a romantic mood. Such activities have seldom been pursued beyond the courting days, but may on occasions lay an excellent foundation for sexual pleasure at any stage in a marriage.

They need to make the room warm enough so that they will not feel uncomfortably cold in the nude. At this stage in the instructions it may emerge that, even though long married, the couple have never been together completely unclothed, and their feelings about this may need to be discussed before proceeding further. For those who hold the idea of full nudity too threatening at this stage, the task can initially be carried out in their underwear. They are asked to purchase some bland and inexpensive body lotion and warm it up before they do their "homework" by placing the container in hot water or the airing cupboard. They are also recommended to place a towel on the floor in case any lotion is spilt. It is suggested that the living room is used, since the bedroom can be too strongly linked with feelings of failure for comfort. One partner is then asked to lie on the towel, as relaxed as possible and with a passive frame of mind. Using the body lotion (though possibly oils or talcum powder if preferred), the other partner then begins to explore all parts of his or her body, excluding the genital area, breasts and nipples, and the anal region. (Many couples do not appreciate the potential for pleasure of the anal region, though not all who do may choose to use this potential.) They are asked not to view this exploration simply as a massage, since this implies only heavier forms of touch, and it is often the lighter ones which the couple have failed to recognise and enjoy.

It is explained that this is primarily an exercise in sensory awareness, in which they need to focus this awareness just on what they are experiencing at a tactile level at any given moment. They need to become aware of the differing textures of every part of their partner's body, while making a conscious effort to exclude any extraneous and intrusive thoughts from their minds. It may be helpful to use the analogy of a circle in which there is only one central point and explain that, just as the circle has only one central point, they can only have one set of sensory feelings or thoughts at the centre of their awareness at any given moment. As long as they are both in an appropriate mood, they will find that by keeping pleasurable sensual feelings central to their awareness, pleasure will build progressively upon pleasure. So often the anxiety about impending failure becomes the central thought in their minds, pushing to the periphery or even outside of their awareness altogether those very feelings which would ensure increasing sexual arousal and orgasm. It is, however, stressed that in this first stage of "homework," sexual arousal per se is definitely not an objective. The partner being "explored" also needs to focus his or her awareness on what is being experienced in each part of the body as it is being touched, second by second.

For many couples it is perhaps the next set of instructions that can most perplex, at least initially. The partner carrying out the body exploration is asked to give priority to his or her own pleasure, and think in terms of "using" the partner's body to