PSYCHOGENIC DEAFNESS*

By P. F. KING (London)†

PSYCHOGENIC deafness while a convenient term, conveys no clear cut picture of any aural disorder. Every otologist has seen patients with deafness in whom he doubts the apparent extent of their hearing loss. Let it be said that hysterical deafness is very closely related to malingering, while the exact separation and diagnosis of the one from the other may in some cases be well nigh impossible.

The incidence of psychogenic deafness amongst patients presenting with a hearing loss is very difficult to assess. Nearly all the work published on this subject during the past twenty years indicates that this type of deafness is a condition practically limited to military medicine; certainly most writers on this subject have been military otologists or those connected with the discharged or pensioned soldier. I do not believe that the condition does not occur in civilian practice, and it may be more common than we realize.

I have attempted to classify this kind of deafness—and in so doing I have tried to arrange each in its order of frequency.

Classification of Psychogenic Deafness

1. *Functional Deafness*
   (*a*) Loss of discrimination faculty (Kopetzky).
   (*b*) Organic deafness with hysterical overlay.
   (*c*) Pure hysterical deafness with no evidence of organic defect.
2. *Malingering*
   (*a*) Malingering associated with hysteria.
   (*b*) Malingering with organic defect.
   (*c*) Simple malingering.

In this classification the relationship between organic defect, hysteria and malingering will be apparent, and there is no doubt that in practice these are closely related. Zilboorg (1944) and Martin (1946) have used a similar classification for psychogenic deafness, but neither have included malingering.

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Loss of the Capacity for Discriminative Listening

This is a type of psychogenic hearing loss which has been described by Kopetzky (1948). It arises from a voluntary or involuntary exclusion of sound by the patient. It is generally and commonly found in patients in the older age groups, in those who appear to have lost the discriminative capacity of listening to what they want to hear in the background sounds of everyday life. This faculty is the possession of every normal person, and it depends to a great extent on the amount of attention with which the individual concentrates on certain sounds he consciously desires to hear. This loss of the power of discriminative listening is also common in young children—particularly those with marked hearing loss.

In later life, with the onset of senile deafness, the individual lessens his attention and in doing so decreases the degree of conscious concentration which he used formerly in listening. His hearing disability is thereby increased. This condition is common, too, in very deaf adults who have not been rehabilitated by an aid or lip-reading.

In addition, I have the notes of nine patients, whom I have seen in the last two to three years, who have complained of this loss in discriminative listening. All have been employed in responsible "listening" jobs in telecommunication. All have been young men—the oldest was 42, and all have had normal hearing acuity as estimated by speech, tuning fork tests and pure tone audiometry. Three have been members of aircrews, one was an airfield runway controller and two were radio-telephony direction finder operators. Despite their apparently normal hearing all complained of difficulty or inability in hearing the transmission of signals through telecommunication channels. In all it is likely that the impact of personal responsibility was a factor underlying the condition.

As an illustration, I give the brief histories of two of these patients.

Case I. Sergeant, aged 42. Airfield Runway Controller

He complained of inability to hear and comprehend radio-telephony communication for three months in his capacity as Runway Controller. He had recently attended an Air Traffic Controllers course and had failed because of his inability to hear over the radio telephone.

There was no abnormality on clinical examination and the hearing acuity was normal. He was a worried, tense man, extremely anxious lest his defect should be the cause of a disaster, particularly when told that his hearing was normal. It was obvious that the responsibility of his job was too great for him, and he was remustered.

Case II. Aircraftsman, aged 19. Radiotelephony direction finder operator

He complained of inability to hear clearly the transmission from homing aircraft on the Radio Homer. He had had the difficulty for the past two months, since "passing up" a homing aircraft. Since that occasion his

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work had been closely supervised by his N.C.O., who finally reported the matter to the Medical Officer.

Clinically, there was no abnormality, and all tests showed the hearing acuity to be normal. He was a pale, fidgety, anxious young man who had clearly lost confidence in his ability to do a responsible job well. He was remustered to clerical duties.

Functional Deafness

Before describing the different types of psychogenic deafness it is opportune to quote Chubb (1946) who in a discussion before this Section gave a good definition: "Cases of hysterical deafness have on the one hand no organic lesion to account for the deafness, and on the other no *conscious* responsibility for the deafness present. They have nothing in common with the deliberate malingerer except the absence of an organic lesion." It might be said that psychogenic deafness is the outward and visible sign of an inward invisible conflict.

The incidence of psychogenic deafness either alone or associated with organic deafness is unknown. I have experience of 31 cases of this type, but it is impossible to assess the frequency of the condition. Lumsden (1945) and Daggett (1946) from their experience in the last war agree that the condition is rare. Others are not so conservative; Blegvad in a paper he read on this subject before this Section in 1936 stated that he considered it established that the hardness of hearing after blast damage was not due to changes in the ear, but was psychogenic. Zilboorg has stated that in the Soviet Union fifty per cent. of cases of deafness acquired under combat conditions were found to have a psychological basis. Craig (1944) analysed 56 cases of deafness related to blast, and found that 8 were hysterical in origin. It is known that exposure to intense noise and blast causes organic changes in the cochlea, and it is likely that cases of a hysterical nature are overlooked.

Most authorities agree that hysterical deafness is not so common as organic deafness with a hysterical overlay. In this respect my figures are a little different—19 cases of hysterical deafness alone and 12 cases of organic deafness with hysterical overlay. I do not know why this is so, but I may have missed cases in the latter group.

What sort of person is likely to present with psychogenic deafness? All classes of men are subject to it, but particularly those having a low mentality, poor education and ebbing morale. Our largest number of cases come from recruit units; other cases arise in older men faced with overseas posting and separation from their families, those with domestic stress and those faced with the continuance of flying duties for which they have lost the taste. To these deafness can be a means of escape from a reality which they feel they can no longer face. This is especially likely to be the case in those in whom for any reason the idea of deafness has crossed their

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minds. Sir Arthur Hurst (1940) noted that a large proportion of cases occurred in men who had a history of previous ear disease. I can confirm this: in 19 cases of pure functional deafness there was a history of some form of aural disease in 12; in addition, in one of these 12 there was a history of deafness in the father, "from the Army" and in another, two brothers were said to be very deaf. One must add to these the 12 cases of organic deafness with a functional everlay, and it will be appreciated that a history of aural disease is a predisposing factor.

The rôle of severe acoustic trauma coupled with blasting in the production of this type of deafness has been mentioned—(but this does not appear to be such a problem as in former wars). Assuming that hysteria supervened on a temporary organic loss, in what way did this operate? It is likely that the initial concussion deafness made such an impression on the mind of the soldier that on coming to himself, or regaining consciousness his first thought was for his hearing: he might be so convinced that he had lost his hearing that he remained deaf by auto-suggestion. These might be classed as cases of organic deafness with a functional overlay. These patients will frequently be deaf in both ears.

The Detection and Diagnosis of Functional Deafness

The detection of hysterical deafness may be easy or fraught with difficulty, and this difficulty is particularly the case if an organic deafness has an hysterical overlay. It can be said that no two cases are alike, though they may have some points in common. Bilateral deafness is not quite so common as unilateral deafness—and if bilateral deafness occurs, it is rarely complete. If the bilateral deafness is absolute, mutism may occur, but I have not seen a case of this. Nine out of 19 patients with hysterical deafness had a bilateral hearing loss compared with 10 with unilateral loss. A bilateral hearing loss is the rule in those having an organic deafness with hysterical overlay. In 12 cases of this type, 9 had bilateral loss.

A history of the sudden onset of deafness should be viewed with suspicion; likewise if the history of deafness does not coincide with the normal clinical history in assessing the deafness from the organic standpoint, hysteria may be suspected.

The demeanour of the patient may be helpful—some show the classical indifference and lack of interest in their symptoms. Others may have associated hysterical manifestations, including blindness, but this is not common.

The response to the whisper and conversational voice tests may show very divergent results. Tuning fork tests are helpful in that the responses are inconsistent. Both speech and fork tests vary from day to day. The patient with a psychogenic hearing loss reacts as though his hearing loss is real, and in unilateral cases he will refer the Weber to the sound ear, while Rinne's test will be positive. Bone conduction may appear to be

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entirely absent in the affected ear. Because of this reaction of the hysterical patient ordinary tests for proving malingering are not very helpful. A point I have noticed in testing some of these people with tuning forks is that a fork strongly vibrating on the vertex of the skull seems to upset them, and they respond in a hysterical manner.

I have found Stenger's test gives inconclusive results in many cases; Lombard's test may or may not be very helpful. Lip-reading is said to be learned easily by cases with bilateral hysterical deafness, and there is no doubt that many of them do appear to be consciously lip-reading when one speaks to them.

Some contend that hysterical deafness is associated with anæsthesia of the external ear; this was originally postulated by Briquet nearly 100 years ago. Hurst (1940) showed this to be a fallacy by testing a series of patients with organic deafness, in a large proportion of whom he found anæsthesia of the external meatus.

In bilateral functional deafness the cochleo-pupillary and palpebral reflexes may be absent when tested by the sudden application of a loud stimulus.

The Use of Audiometric Tests

The advent and improvement of pure tone audiometry has eased considerably the task of the otologist faced with psychogenic deafness.

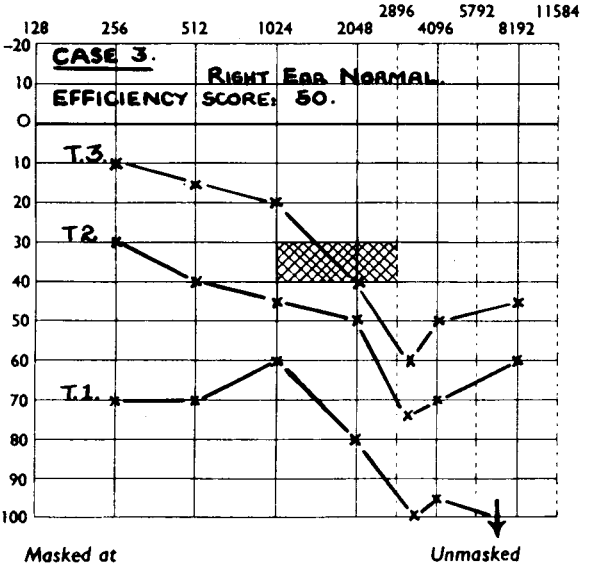


FIG. 1.

Pure tone Air Conduction Audiogram of a patient with organic deafness with hysterical overlay. Only the findings for the left ear are shown.

NOTE: In this and subsequent audiograms, T1, T2, etc., represent audiometric tests in chronological order.

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Both the hysteric and the malingerer will give inconsistent responses not only from day to day, but from hour to hour. It has been the experience of Doerfler and Stewart (1946) that consistency of response on successive audiometric tests is not necessarily always indicative of organic deafness. In fact, they found it in some patients with functional deafness. They explain this by assuming that the patient employs a figurative yard-stick against which *all* sounds are gauged and fails to respond to any fainter sound.

Figure 1 is the audiogram of a patient (Case III) with a mild organic deafness with hysterical overlay.

This patient was a Flight Engineer who had returned to flying after a lapse of five years. This, associated with considerable domestic stress, had brought on an anxiety state, which had in turn produced the hysterical manifestation. The curves on the audiogram all show a similar shape, as though with improvement he was adjusting his figurative yard-stick to the same extent at all frequencies.

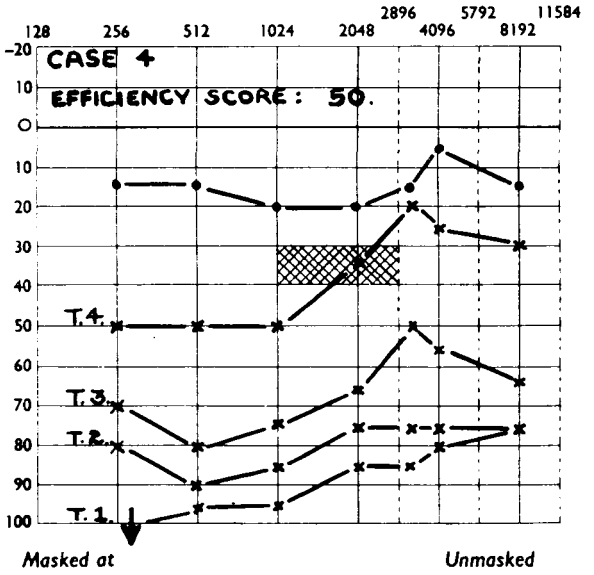


FIG. 2.

Pure tone Air Conduction Audiogram of a patient with organic deafness with functional overlay.

Note the low efficiency score and the comparable curves obtained from the left ear.

In Fig. 2 is shown the audiogram of a boy of 21 (Case IV), a batman/waiter who had undergone left aural polypectomy 4 months before in an attempt to clear a left chronic suppurative otitis media. The left ear was dry and the drumhead healed, but he complained of deafness; the curve for the left ear again showed the overall adjustment of his threshold at

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successive tests and each is comparable to the curve representing the level of organic deafness one might expect. I do not believe a malingerer could produce an audiogram like this.

A trained audiometrician will soon spot this sort of case; for each frequency we employ ascending and descending scales of intensity and these will generally show divergent findings on the first test.

We have also found that our efficiency test is of use in the diagnosis of this condition. In this test the subject listens to recorded speech at an intensity of 106 decibels in a background noise of 100 decibels. The scores obtained are far below those of patients with the most advanced form of perceptive loss. This corresponds to the opinion of Doerfler and Stewart who found, when noise is introduced in measured quantity into a system where speech is already present, that the patient with psychogenic deafness responded in a different manner from the patient with normal hearing or one with organic hearing loss. They made their findings the basis of the Doerfler-Stewart test; first, the threshold of hearing for speech is determined. Noise at a known intensity is then introduced and increased, and continued to a level where it inhibits speech reception. This is noted as the *noise interference level.* The level at which the patient is first aware of the noise—the noise reception threshold is measured separately. The speech threshold is then repeated.

Psychogenic loss may be suspected

(*a*) if speech reception is inhibited by a noise interference level less intense than that at which speech was presented;

(*b*) where noise perception threshold is lower than that for speech reception;

(*c*) where there is a marked discrepancy between speech thresholds.

In 1947, Michels and Randt described their method of using the galvanic skin response. A standard audiometer was used as the sound source and the galvanic skin reaction was recorded by an electro-encephalogram. We have tried this method, but with little success. In 1952 a modification of this method using "clicks" at various known intensities was described by Perl, Galambos and Glorig. Their patients were stimulated by "clicks" and pure tones of known physical properties and the brain waves were recorded by an electro-encephalogram. In addition, psychogalvanic audiometry has been used employing conditioned sound stimuli in conjunction with the skin resistance response.

The Value of Tests of Vestibular Function

The rôle of caloric testing of labyrinthine function in this condition is the subject of debate. Craig (1944) is of the opinion that a normal response to caloric testing is evidence of functional deafness. I do not think one is justified in concluding this, though it may often be the case;

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rather I would say that if the labyrinthine function is impaired, one is dealing with an organic deafness and one can be sure the deafness is not hysterical.

Management

The key to the successful management of these cases is early diagnosis. Once detected, the early stages of treatment by suggestion may be started by the otologist, but the future management of the case is best left to the psychiatrist.

Opinions differ as to the best course to adopt. Hardy (1948) considers that light hypnosis, with associated suggestion, is preferable; others, including myself, consider that the use of the penthothal abreaction is the most efficacious. Using dilute intravenous sodium pentothal, the patient can be reduced to an uninhibited babbling state. Patients often become extremely emotional during the abreaction which not only gives the psychiatrist an insight into what has precipitated the deafness, but also relieves pent up tension. This in itself is beneficial. Suggestion can be attempted in the period of recovery.

Provided the case is detected early and managed with patience, it is likely that recovery will ensue. If the diagnosis is missed then the patient may become convinced that little can be done and if left for long, such cases can be difficult to help. Some do recover spontaneously.

It is of interest to give some short histories of typical cases.

Case V. Functional deafness. Aircraftsman, aged 19 (Fig. 3)

He attended with a history that two weeks previously he received a blow on the right ear from a football. When lying on his left ear that night he noticed deafness in the right. There had been no pain, tinnitus or vertigo and no bleeding from the ear. He gave a history of right aural discharge at 11, which settled with treatment. His father had been deaf for many years.

Examination showed no abnormal clinical findings. He had no apparent hearing in his right ear; Weber was unreliable. Rinne was positive in each ear. Lombard's test was positive. No cochleo-palpebral reflex on right.

Pure tone audiometry showed no hearing at all in the right ear. Efficiency score 58. It was concluded that he had a functional right deafness.

He was seen one month later when the clinical and audiometric findings were unchanged (T2). At this stage he was given an explanation of his symptoms and the next day the audiometric findings were improved (T3). He was seen by a psychiatrist who helped with further suggestion. One month later both audiometric findings and efficiency scores were improved (T4). Five months after onset of symptoms a re-check showed he had normal hearing acuity (T5).

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Points of interest are:

(*a*) the family and personal history of ear trouble ;

(*b*) the apparent absolute deafness;

(*c*) the lowered efficiency score despite normal hearing in the unaffected ear, and its improvement.

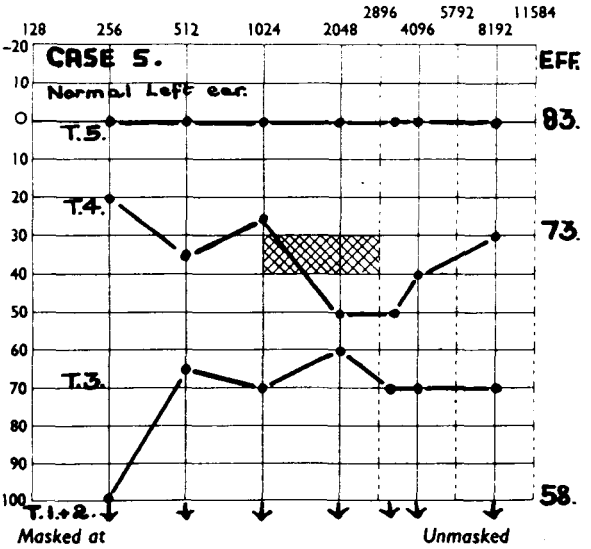


FIG. 3.

Pure tone Air Conduction Audiogram of a case of hysterical right deafness. Of interest is the low efficiency score and its subsequent improvement.

Case VI. Organic Deafness with Functional Overlay. Aircraftsman, aged 22, Batman/Waiter

He was seen previously at another R.A.F. hospital where he complained of deafness and slight tinnitus in the left ear for three months. He was hard of hearing in the right and was thought to have a catarrhal deafness and was treated by eustachian inflations after removal of the adenoid remnants. There was no improvement. He had first noticed deafness at the age of 8; he was seen by an E.N.T. surgeon at age 13, who removed the tonsils and adenoids. Following this hearing improved. He was assessed as having fair hearing on entry into Regular service with the R.A.F. three months before.

When seen by me one month later, nothing much of note was apparent on clinical examination. Both drumheads were a little retracted but mobile on Valsalva. Weber was referred to right. Rinne negative each ear. He could hear conversational voice at 8 ft. in his right ear and 2 ft. in the left. He gave a hysterical reaction with a fork on the vertex, and he was

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apparently a good lip-reader. Efficiency score was 59. Audiometry showed a marked loss in the left ear compared to the right (Fig. 4).

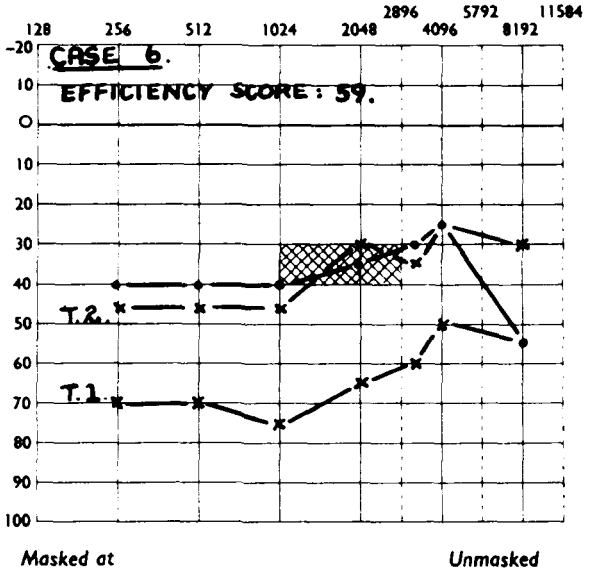


FIG. 4.
Pure tone Air Conduction Audiogram of a patient with bilateral conductive deafness with a hysterical overlay. Again there is a low efficiency score, and closely comparable curves for the left ear.

In view of the history and findings it was considered that he had a bilateral organic deafness with hysterical overlay, and he was placed in the care of a psychiatrist. He underwent a successful pentothal abreaction when it was found that he was torn between his attachment to his invalid mother and his desire to lead his own life. With suggestion his hearing improved to the level of his organic deafness very quickly. This level was unaltered one month later. Throughout, the findings for the right ear were constant. Of interest in this case are:

(*a*) the history of deafness in childhood;
(*b*) again the low efficiency score despite the history and signs of a middle-ear deafness;
(*c*) the findings from the abreaction. This could be a civilian case;
(*d*) the comparable curves for the left ear.

Case VII. Organic Deafness in right ear—Functional Deafness in left. Aircraftsman, aged 19.

When seen he complained of deafness; he had been deaf in the right ear for as long as he could remember. In the past two months he had been increasingly deaf in the left ear. He attributed this to a slap on the left

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side of the face from his girl friend; deafness in the left ear immediately followed this incident, but resolved, only to deteriorate again.

There was a family history of deafness in the right ear, in the maternal grandfather, mother and younger brother. The unilateral deafness had been noted on entry into the R.A.F. He gave no other aural history.

Examination showed no clinical abnormality. Weber was referred to the left. Rinne was positive in the left ear and false negative in the right. He had no hearing in the right ear and hearing in the left ear was variable. Lombard's test was positive for true deafness in the right ear only. Audiometry gave a consistent response in the right ear, but a variable response in the left (Fig. 5).

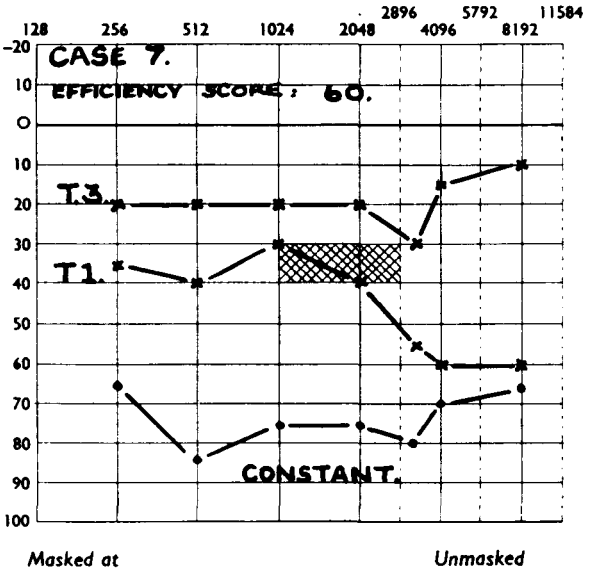


FIG. 5.
Pure tone Air Conduction Audiogram of a patient with congenital right nerve deafness and hysterical left deafness.

The diagnosis was made of a congenital right nerve deafness associated with hysterical left deafness. The psychiatrist to whom he was referred agreed that this was a manifestation of hysteria.

Points of interest are:

(i) the co-existence of separate organic and functional deafness ;

(ii) the constant findings by audiometry for the right ear with the left unmasked. By "crossed" hearing he had a constant threshold for the left ear which was not borne out when testing the left ear. This is suggestive of malingering, but the patient had neither the demeanour nor the motivation of a malingerer, and taking the history and findings into account the likely diagnosis was hysteria.

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Malingering

Finally one must consider simulated deafness. This occurs as an entity, but is also associated with organic deafness and sometimes with hysteria. It is a common failing of humanity to make more of a disability than clinical evidence would suggest, and this is particularly so where compensation or a pension is payable. This is as true of patients with organic deafness as of those with other disabilities and such cases are generally fairly easy to detect.

Simulated deafness may be associated with hysteria and Daggett has described what he calls "induced hysteria" in those patients who are primarily simulating deafness but who are not detected. The mechanism underlying this is easy to understand. Such cases may be extremely difficult to manage.

The malingerer who simulates deafness has one other thing in common with the patient with psychogenic deafness—they are both showing evidence of a poor personality. Generally, only unilateral deafness will be simulated, as in this the pretence is easier to maintain ; however bilateral deafness may be mimicked and this is commoner in coloured Imperial troops than in others. Frequently there is a self-induced otitis externa produced by a dirty finger nail—this may confuse the picture as well as produce some degree of deafness. Once the typical blood-stained linear excoriations have been seen they will not be forgotten. Occasionally the malingerer may go so far as to perforate the tympanic membrane.

The detection of the malingerer may not be easy; the longer he gets away with his deception the more confident and practised he becomes, and the more difficult it is to trip him by simple tests. He should be watched with others if he is suspect as he may forget his pose. Each ear can be subjected to tests separately; sometimes it is useful to blindfold the eyes.

The tests employed are familiar to all—a favourite being Stenger's test. The Chimani-Moos' modification of Weber's test may be helpful but is not always reliable.

I have found Lombard's test very useful and unless he has been coached the malingerer will invariably be trapped. Other tests employed are the stethoscope test, that with two speaking tubes and sundry trick remarks; these are well worth knowing and employing, but they have been largely surpassed by the use of pure tone audiometry where it is available—no malingerer can give consistent results on checking and rechecking—particularly when the pattern of testing is varied. In the same way he can be detected by loudness balancing tests, but these should be rarely necessary.

As in functional deafness, the key to successful management is early recognition—and if a malingerer is suspected he should not be allowed to get away with his deception.

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Psychogenic Deafness

Summary

I have tried to give a general picture of psychogenic deafness based on a series of forty cases supported by the published work of others. I have not included those who were malingering in this series. Early recognition of either functional or simulated deafness is essential for a successful outcome, and with modern diagnostic aids the problem of detection is easier than formerly. By its very nature, psychogenic deafness is likely to continue to excite the interest of otologists and psychiatrists alike.

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