

TINNITUS

ESSAY

Submitted for the partial fulfilment
of the Master Degree of
Oto-Rhino-Laryngology

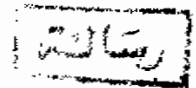
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I N T R O D U C T I O N

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- Introduction
 - The aim of the work.

INTRODUCTION

Tinnitus, unfortunately a complaint which is not uncommon, is very often a menace both to the patient and the otologist. To the patient it may be, to the exclusion of all others, the one symptom which causes him untold torture; and to the otologist it may be one of the very few problems that very often makes him hate his job. There is nothing worse than to be forced to tell a patient craving for advice, either directly or indirectly, either from the start or after a long course of varying lines of treatment, that no more could be done for him.

Tinnitus can be a troubling human symptom, which may or may not be of ear origin. Tinnitus is not a disease and is not a syndrome. It must be considered a symptom resulting from any one of a number of lesions.

In spite of the large amount of literature written on the subject every side of it is still vague and unsettled.

Before entering into the discussion of this topic, it is necessary to agree on a set of terms concerning tinnitus that will allow us to separate various subcategories of the symptom. The term tinnitus aurium means literally ringing of the ears, and will be used to refer only to sounds originating in the ear.

Other terms as tinnitus cranii, tinnitus cerebri or auditory hallucination are frequently confused with ear tinnitus, and must be distinguished from it. For the remainder of this essay, the term tinnitus, when used alone will refer only to tinnitus aurium.

The aim of the work:

The object of this essay is to review the literature dealing with tinnitus, in the hope of clarifying the present understood of this important and frequent symptom on basic foundations.

The importance of this study lies in the fact that, till the present time, there is no known clear picture for tinnitus, and so, a collation of the available information can greatly increase our understanding of tinnitus.

T I N N I T U S

1

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- Definition.
 - Classification.
 - Incidence.
 - The relation to age and sex.

TINNITUS

Definition:

According to Dorland's Medical Dictionary, (1972) tinnitus (ti - ni'tus) is a noise in the ears, which may at times be heard by others than the patient. Tinnitus au'rium, is a subjective sensation of noises in the ears.

Edwards, (1973) has stated that the word "tinnitus" is derived from the latin "tinnire" which literally means "to tinkle".

Meyerhoff and Cooper, (1980) added to the previous definition that the term as it is now used is more inclusive, and is generally accepted as meaning an auditory perception of internal origin (noise), usually unwanted, usually localized as originating from within, and rarely heard by others. Approximately 70 per cent of all sufferers describe their tinnitus as either steam escaping, ringing, or buzzing. Tinnitus may be described as a pure tone in about 25 per cent of all patients.

Classification:

There are many proposed classifications for tinnitus which are suggested by many authors who dealt with this subject.

Classification of tinnitus into two main classes: extrinsic tinnitus and intrinsic one, has been suggested as early as (1938) by Thomas and (1947) by Atkinson as follows:

I. Extrinsic or false tinnitus results from disturbances which arise outside the auditory tract.

II. Intrinsic or true tinnitus is the result of some disturbance within the auditory tract itself.

Connor, (1954) has mentioned the following as regarding the different types of tinnitus:

"Tinnitus may be periotic, arising about the ear, or entotic, arising within the ear, it may be internal, arising within the cochlea, or external, arising without the cochlea. It may be subjective, heard only by the patient, or objective, heard by the observer, or

both. It may be vibratory due to transmitted vibrations, most frequently of muscular or cardiovascular origin, or nonvibratory, caused by irritative or degenerative changes in the hair cells, the auditory nerve, spiral ganglion, or cerebral centres.

Huizing and Spoor, (1973) have stated that, tinnitus can be classified in several ways. A common classification is in terms of subjective and objective tinnitus. But there is an unusual type of tinnitus which cannot be incorporated into either of these broad categories; namely, a tinnitus characterized by the production of a sound by the ear which is audible to the observer, but not to the patient.

Then the authors discussed a single case of that unusual type of tinnitus, and mentioned that six comparable cases were found in the literature.

Meyerhoff and Cooper, (1980) have suggested the following classification which seems to me the most accurate one:

I. Vibratory tinnitus - real sounds, mechanical in

origin, arising within or near the ear. It can be subdivided into subjective (heard only by the patient) and objective (heard by interested observers).

II. Non-vibratory tinnitus - neural excitation and conduction from anywhere within the auditory system to the auditory cortex, without a mechanical basis. Can be subdivided into central and peripheral (tympanic and petrous) in origin. Due to its inherent nature, the non-vibratory form of tinnitus is always subjective.

I. Vibratory tinnitus:

- a. Subjective type.
- b. Objective type.

II. Non-vibratory tinnitus: always subjective

- a. Central in origin.
- b. Peripheral in origin.

Incidence:

Estimates as to the incidence of tinnitus are difficult to obtain and the only authoritative statement available is that of the last National Health Survey conducted by the National Institute of Health

in 1962. They found 36 million American adults with tinnitus. Of that number 20 % or 7.2 million, had tinnitus in its severe or extreme form. The next national health survey will contain new and additional questions about tinnitus. In all likelihood it will reveal an increase in the number of tinnitus sufferers judging from the alarming increase in incidence of induced hearing loss (Vernon, and Schleuning, 1978).

Tinnitus is a frequent complication of various ear diseases with an incidence of 80 - 95 % (Soldatov, 1974), (Fowler, 1948).

Objective tinnitus, in relation to the subjective one, is relatively rare. (Kwee and Struben, 1972), (Reed, 1960).

Objective tinnitus is a rare entity in any case but unilateral objective tinnitus is even rarer. (Quarry, 1972).

The relation to age and sex:

In general, the commonest age of onset is about

50 - 60 years (Venters, 1953), (Reed, 1960). The tinnitus is uncommon in children (Thomas, 1938; Fowler and Fowler, 1955). As regards the relation to sex, Hazell (1979) has stated that there is a slight predominance of the symptom among women.

In all series of objective tinnitus the sex ratio has been 2 - 4 / 1 = female / male. (Hamburger, 1931; Sears, 1938; Atkinson, 1947).

In an audiometric study of two hundred cases of subjective tinnitus¹ done by Reed, 1960 he found the following results:

- Approximately 25 per cent of cases were in the 20 - 50 age groups.
- Incidence of tinnitus increases with the age up to the age of 70 years.
- The greatest number of cases between the ages of 41 - 70 years.
- Sex distribution is approximately equal between the two sexes.

A E T I O L O G Y O F T I N N I T U S

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- Aetiology of vibratory tinnitus.
 - Aetiology of non-vibratory tinnitus.