

Atlas of the histopathology of ear tumours

P. G. GERLINGS

EMERITUS PROFESSOR OF OTO-RHINO-LARYNGOLOGY
STATE UNIVERSITY UTRECHT, THE NETHERLANDS



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Foreword

A busy life-time practice as an Ear, Nose and Throat surgeon coupled with an active mind requiring methodical record keeping and filing, has left Prof. Gerlings – at the time of his retirement as an University Professor – with a veritable treasure of clinical observations.

Having shed the responsibilities as Chairman of his University Department he decided that the time had come to restudy his records and also to devote efforts to the morphology and histo-pathology of otological disease, a subject often neglected by pathologists. We were delighted to meet his modest requirements for bench space in our laboratory; the outcome, among others, is this atlas. Also as a senior (non salaried) member of our staff his impact on the training of our residents has been considerable, at the same time opening up new vistas for qualified pathologists.

Ear, Nose and Throat specialists have in the past made valuable contributions to pathology as the historical data in this atlas also show. Prof. Gerlings is joining their ranks. This atlas contains a collection of data, not easily found in other texts in such a convenient grouping and abundance of illustrations. It will undoubtedly find its way into departments of otology as well as pathology and should be a valuable asset in post-graduate instruction of otologists, pathologists and oncologists engaged in the practice of diseases of the head and neck region.

My colleagues and I are most grateful to Prof. Gerlings for his decision to use our laboratory as a base for his post-retirement activities and we hope that he will continue to do so.

G. Bras

‘Medical writings are by their nature ephemeral’
T. G. Wilson (1965)

Preface

The hundred years old picture of Schwartze’s temporal bone, which shows destruction caused by carcinoma, demonstrates the beginning of an era of increasing interest in the diagnostic and therapeutic possibilities of oncology of the ear.

This Atlas presents a survey of the most common tumours of the ear as seen at the histopathological laboratory: tumours of the auricle and external auditory meatus as well as those of the middle ear, the labyrinth and the internal auditory meatus.

The cases are collected during a 50-year period at University Departments in Amsterdam (1929-1958) and Utrecht (1958-1972) and at the Pathological Institute of the State University, Utrecht (1972-1979). During the early investigations into acoustic tumours, Professor F.H. Quix, at that time director of the E.N.T. Department, University of Utrecht, made a very careful study of some cases, using histological sections of the labyrinth and the internal auditory meatus. Some of these cases will be found in this Atlas. Some sections from interesting temporal bone studies were received from Professor K. Wittmaack (1932) and Professor A. de Kleyn (1949).

This Atlas can be used by residents in E.N.T.-departments while they study sections of biopsy specimens from their patients. General pathologists and oto-rhino-laryngologists may find many data on local extension of growths and tumour metastases. Some historical notes on glomus jugulare tumours and acoustic tumours are essential for a better understanding of the development of our knowledge of ear tumours.

An extensive review of the literature on the pathology of the ear has been recently presented by Harold Schuknecht in his standard work *Pathology of the ear* (1974), and by Dr I. Friedman in his book *Pathology of the ear* (1974). The text of this Atlas is therefore limited to the necessary explanations of the photographs.

Utrecht, april 1979

P. G. Gerlings

Acknowledgements

I am indebted to Dr G. Bras and Dr J. van Unnik, Directors of the Institute of Pathology, University of Utrecht, for their hospitality extending over many years, which made this Atlas possible.

I thank the photographic departments of the Institute of Pathology (Mr Dumernit) and the E.N.T.-Department (Mr Van Duivenboode), University of Utrecht.

I am also grateful to the Institute of Neuropathology (Dr Van Rossum, Mr Sakkers) for the training of histological laboratory technicians.

Special thanks are due to Mr T.H. van Winsen, Amsterdam for the flawless English translation of the Dutch manuscript.

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Microscopic anatomy of the temporal bone

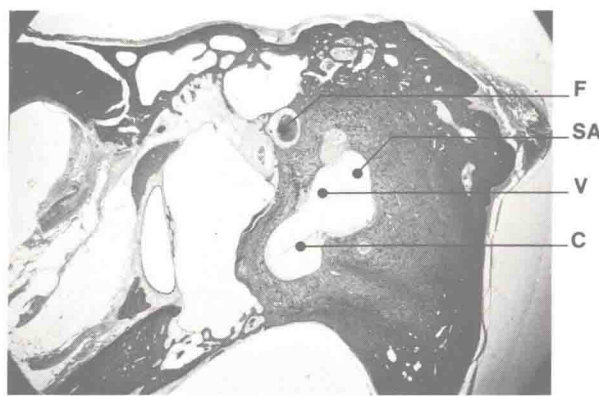
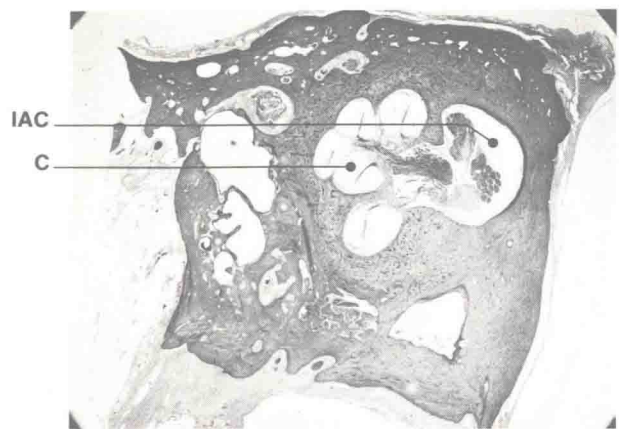
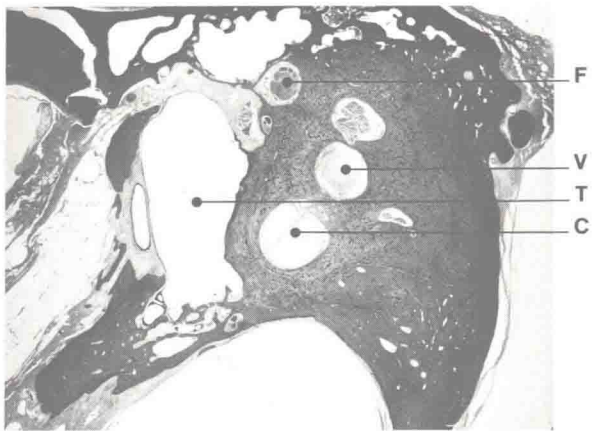
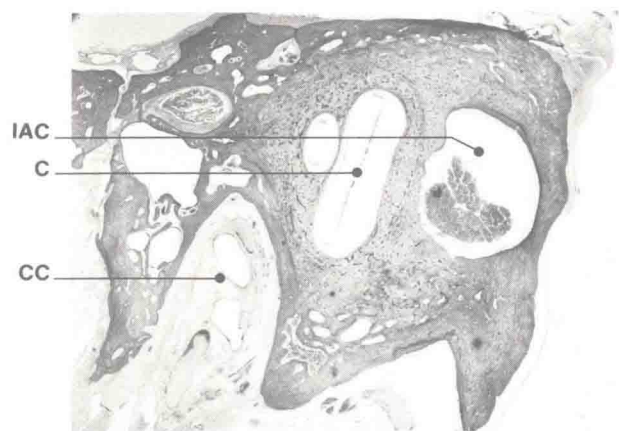
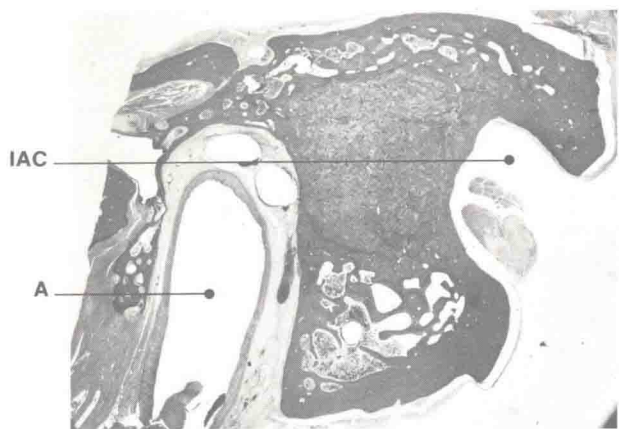
To elucidate the histopathological anatomical figures in this atlas, this chapter presents a number of vertical and horizontal sections through the temporal bone.

Figures 1 through 10 show vertical sections cut perpendicular to the axis of the petrous pyramid: figures 11 through 18 show horizontal sections through the petrous pyramid, from the mastoid through to the carotid canal. The horizontal specimens do not include the tympanic membrane.

Fig. 1-10
11-18

Abbreviations used:

| | |
|-----|------------------------------|
| F | facial nerve |
| CF | facial canal |
| EAC | external auditory canal |
| IAC | internal auditory canal |
| C | cochlea |
| V | vestibule |
| U | utricle |
| SA | sacculle |
| LSC | lateral semicircular canal |
| SSC | superior semicircular canal |
| PSC | posterior semicircular canal |
| T | tympanic cavity |
| M | malleus |
| I | incus |
| S | stapes |
| CC | carotid canal |
| A | internal carotid artery |



1. Internal carotid artery (A), internal auditory canal (IAC).
2. Carotid canal with plexus venosus and plexus sympathicus (CC), cochlea (C) and internal auditory canal (IAC).
3. Cochlea with modiolus (c), internal auditory canal with facial, cochlear and vestibular nerves (IAC).

4. Cochlea (c), facial canal (CF), internal auditory canal (IAC).
5. Basal cochlea turn (c), vestibule (v) and facial nerve (F).
6. Basal cochlea turn (c), vestibule (v) with saccule (SA).