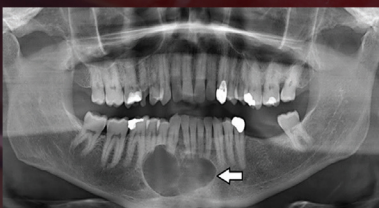
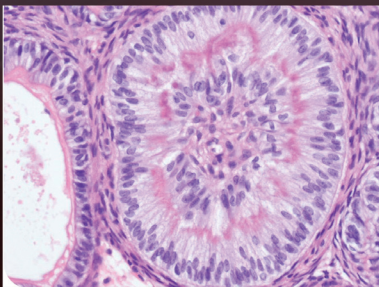
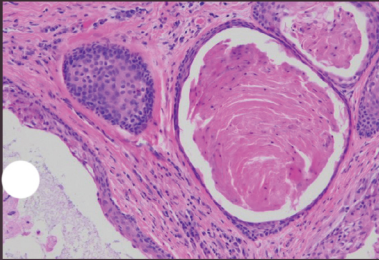


# Handbook of Oral Pathology and Oral Medicine

S. R. Prabhu



with website



WILEY Blackwell



**Handbook of Oral Pathology and  
Oral Medicine**



## Handbook of Oral Pathology and Oral Medicine

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*To the victims of COVID-19 infection and all those frontline healthcare workers who are engaged in the fight against the disease with utmost courage and dedication.*





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## Foreword

This is an amazing work. Professor SR Prabhu has touched constructively on almost every “issue”, every decision required, in the day-to-day practice of oral medicine and to a considerable extent, oral/maxillofacial pathology. He has laid out the material in a very logical set of chapters. The extensive illustrations are of uniformly high quality: many of these have been donated by colleagues around the world and I join in thanking them for their generosity: many have become personal friends to us both.

I initially was hesitant to contribute this Foreword. As a quantitative scientist, I always wish to see the evidence base for every diagnosis, test and treatment presented. This is deliberately not the intention here - indeed it is the opposite of Prof Prabhu’s intent. As he put it in response to my challenge “My intention is not to compete with great authors of international repute. The material presented is truly a compilation of what is known in the scientific papers, books and case reports that are (*I might interpolate with much hard work*) available. This is a humble attempt to provide students and busy practitioners with a source that provides quick access to information”. I see the value of this: indeed, I wish my current undergraduate and postgraduate students came to clinics with a copy in their pockets!

Professor SR Prabhu is a remarkable professional in the autumn of a remarkable career. This has impacted the dental profession, and particularly dental students, across the globe, for decades, beginning with his first teaching appointment in India in 1971. We first met when he was Commonwealth Medical Scholar in my department in London in 1974. Chronologically since then he has taught and led teaching [including from positions as Head of Department or Dean in several institutions] in universities in India, Kenya, Sudan, Australia, Papua New Guinea, West Indies, Malaysia, Saudi Arabia, West Indies (again), United Arab Emirates, and several Australian universities, again. His vast knowledge reflects this.

I have learned much from his global experience and it was particularly educative for me to work with him, as co-editor and co-author of his largest work *Oral Diseases in the Tropics* (Oxford University Press 1992; Revised reprint, Jaypee Bros. 2017). Beyond that his bibliography is extensive.



We are fortunate that he has maintained the drive and passion to give us this valuable work at this time: one positive outcome of Covid-2019.

**Newell W Johnson, CMG**

Emeritus Professor of Oral Health Sciences,

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Dean Emeritus and Honorary Professor of Dental Research,

Griffith University, Queensland, Australia

Brisbane, June 2021



## Preface

The *Handbook of Oral Pathology and Oral Medicine* is primarily targeted at undergraduate dental students and practitioners. Dental students find the available prescribed textbooks of oral pathology and oral medicine loaded with information and are not user friendly, particularly at the time of preparation for examinations. Teachers and students alike feel that there is a need for a book that offers information in a concise manner for quick reference. This handbook aims to fill this need by providing a highly illustrated succinct guide presented as bulleted lists for easy reference. Text style used in this handbook allows the reader to quickly gather essential information relevant to the disease without scanning through lengthy paragraphs. For further information, a recommended reading list is provided at the end of each chapter.

Topics included in this book are in accordance with the universally followed curricula in oral pathology and oral medicine. The text is divided in seven parts: pathology of teeth, pulp, and supporting structures, pathology of jawbones, pathology of the oral mucosa, pathology of the salivary glands, clinical presentation of mucosal disease, orofacial pain, and miscellaneous topics of clinical relevance. Many international clinicians and teachers have generously contributed clinical, radiographical and photomicrographic images to this handbook.

The author and the publishers feel that the format, design, style, and content of the text used in this handbook will assist dental students and clinicians in dentistry and other healthcare professions. Accompanying this handbook is a website containing case scenarios and MCQs especially designed for dental students preparing for examinations.

**S. R. Prabhu**

Brisbane

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## About the Companion Website

Don't forget to visit the companion web site for this book:

[www.wiley.com/go/prabhu/oral\\_pathology](http://www.wiley.com/go/prabhu/oral_pathology)



There you will find valuable materials, including:

- 240 multiple choice questions
- 36 clinical case scenarios
- Images from the book as downloadable PowerPoint slides

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## Nomenclature Used in The Study of Human Disease

### Nomenclature of diseases:

- **Disease:** impairment of normal physiological function affecting all or part of an organism manifested by signs and symptoms.
- **Disorder:** deviation from the usual way the body functions.
- **Condition:** an abnormal state of health that interferes with the usual activities or feeling of wellbeing.
- **Risk factor:** something that increases a person's chances of developing a disease.
- **Aetiology:** the study of the underlying cause of the disease/disorder.
- **Pathogenesis:** the development and chain of events leading to a disease.
- **Epidemiology:** a branch of medical science that deals with the incidence, distribution, and control of disease in a population.
- **Incidence:** the measure of the probability of occurrence of new cases of a disease over a certain period.
- **Prevalence:** total number of individuals in a population who have a disease or health condition at a specific period, usually expressed as a percentage of the population.
- **Prognosis:** prediction of the likely course and outcome of a disease.
- **Morbidity:** the extent to which a patient's overall health is affected by a disease.
- **Mortality:** the likelihood of death from a particular disease.
- **Acute and chronic illnesses:**
  - Acute illnesses are of rapid onset.
  - Chronic conditions usually have a gradual onset and are more likely to have a prolonged course.
- **Syndrome** refers to a collection or set of signs and symptoms that characterize or suggest a particular disease.

### Clinical nomenclature of oral mucosal lesions:

- **Lesion:** clinically detectable surface changes in the skin or mucous membranes can be termed 'lesions'. They include the following:
  - **Macule:** a macule is a change in surface colour, without elevation or depression and therefore nonpalpable, well- or ill-defined, but generally considered less than 1.5 cm in diameter at the widest point.
  - **Patch:** a patch is a large macule equal to or greater than 1.5 cm across. Patches may have some subtle surface change, such as a fine scale or wrinkling but although the consistency of the surface is changed, the lesion itself is not palpable.
  - **Papule:** a papule is a circumscribed, solid, palpable elevation of skin/mucous membrane with no visible fluid, varying in size from a pinhead to less than 1.5 cm in diameter at the widest point.

- **Plaque:** a plaque is a broad, flat-topped papule, or confluence of papules, equal to or greater than 1.5 cm in diameter, or alternatively as an elevated, plateau-like lesion that is often greater in its diameter than in its depth.
- **Nodule:** a nodule is morphologically similar to a papule and is a palpable spherical lesion in all three directions: length, width, and depth. A nodule is usually a solid lesion of 1.5 cm or less in diameter. It may be sessile (attached directly by the base) or pedunculated (attached by a peduncle – a stem).
- **Tumour:** similar to a nodule but larger than 1.5 cm in diameter.
- **Vesicle:** a vesicle is a small blister; a circumscribed, fluid-filled, epithelial elevation generally less than 1.5 cm in diameter at the widest point. The fluid is a clear serous fluid.
- **Bulla:** a bulla is a large, rounded or irregularly shaped blister of the skin or mucous membrane containing serous or seropurulent fluid. Bullae are greater than 1.5 cm in diameter.
- **Pustule:** a pustule is a small elevation of the skin or mucous membrane containing cloudy or purulent material (pus) usually consisting of necrotic inflammatory cells. When haemorrhagic, the colour of the pustule may be red or blue.
- **Cyst:** a cyst is an epithelial-lined pathological cavity containing liquid, semisolid, or solid material.
- **Pseudocyst:** a cyst-like lesion that is not lined by epithelium.
- **Fissure:** a fissure is a crack in the skin or mucous membrane that is usually narrow and deep.
- **Erosion:** an erosion is a lesion that lacks the full thickness of the overlying epithelium and is moist, circumscribed, and usually depressed.
- **Ulcer:** an ulcer is a discontinuity of the skin or mucous membrane exhibiting complete loss of the epidermis or epithelium, with some amount of destruction of the subepithelial connective tissue.
- **Telangiectasia:** a telangiectasia represents an enlargement of superficial blood vessels in the skin or mucous membrane to the point of being visible.
- **Scale:** a skin lesion that consists of dry or greasy laminated masses of keratin.
- **Crust:** a skin lesion that is dried sebum, pus, or blood, usually mixed with epithelial and sometimes bacterial debris. Can occur on the vermilion as well.
- **Lichenification:** epidermal thickening of the skin characterized by visible and palpable thickening with accentuated skin markings.
- **Excoriation:** a punctate or linear abrasion of the skin produced by mechanical means (often scratching), usually involving only the epidermis, but commonly reaching the papillary dermis.
- **Induration:** dermal or mucosal thickening causing the cutaneous or mucosal surface to feel thicker and firmer.
- **Atrophy:** a loss of epithelial or submucous tissue. With epithelial atrophy, the mucous membrane appears thin, translucent, and wrinkled. Atrophy should be differentiated from erosion.
- **Maceration:** in maceration, the skin softens and turns white, due to being consistently wet.
- **Umbilication:** formation of a depression at the top of a papule, vesicle, or pustule.
- **Rash:** presence of multiple non-vesicular skin eruptions.
- **Sinus/fistula:** a sinus or fistula is a tract connecting cavities to each other or to the surface.
- **Sessile lesion:** a lesion attached to the underlying tissues with a broad base.
- **Pedunculated lesion:** a lesion attached to the underlying tissues with a narrow base, such as a stalk or pedicle.
- **Serpiginous lesion:** a lesion with a wavy border.
- **Discoid lesion:** a round or disc-shaped lesion.
- **Annular or circinate lesion:** a ring-shaped lesion.
- **Herpetiform lesions:** lesions resembling those of herpes.

- **Reticular** or **reticulated lesion**: a lesion resembling a net or lace.
- **Verrucous lesion**: a wart-like lesion.
- **Stellate lesion**: a star-shaped lesion.
- **Target lesion** or **'bull's eye lesion'**: named for its resemblance to the bullseye of a shooting target. Also referred to as an 'iris' lesion.
- **Purpura**: haemorrhage into the surface of the skin or mucous membrane. Purpura measure 3–10 mm whereas petechiae measure less than 3 mm, and ecchymoses greater than 10 mm. The appearance of an individual area of purpura varies with the duration of the lesions. Early purpura is red and becomes darker, purple, and brown, yellow as it fades. Purpuric spots do not blanch on pressure.
- **Petechiae**: petechiae are small sharply outlined and slightly elevated red- or purple-coloured purpuric macules of about 1–3 mm in diameter. They contain extravasated blood.
- **Ecchymoses**: ecchymoses are larger purpuric lesions that are macular and deeper in origin than petechiae. They are to be distinguished from hematoma caused by extravasation of blood.
- **Hematoma**: a localized swelling that is filled with blood caused by a break in the wall of a blood vessel.
- **Hamartoma**: a benign (non-neoplastic) tumour-like growth consisting of a disorganized mixture of cells and tissues normally found in the body where the growth occurs.
- **Epulis**: a nonspecific exophytic gingival mass.

#### **Histological nomenclature of oral mucosal lesions:**

- **Hyperplasia**: an increase in the amount of organic tissue that results from cell proliferation.
- **Parakeratosis**: a mode of keratinization characterized by the retention of nuclei in the stratum corneum.
- **Hyperkeratosis**: thickening of the stratum corneum associated with the presence of an abnormal quantity of keratin.
- **Orthokeratosis**: hyperkeratosis without parakeratosis. No nucleus is seen in the cells as in the normal epidermis (skin) or epithelium (mucous membrane).
- **Acanthosis**: a benign abnormal thickening (hyperplasia) of the stratum spinosum, or prickle cell layer of the epidermis (skin) or epithelium (mucous membrane).
- **Acantholysis**: the loss of intercellular connections (desmosomes), resulting in loss of cohesion between keratinocytes in the skin or mucous membrane.
- **Spongiosis**: intercellular oedema (abnormal accumulation of fluid) in the epidermis in the skin or the epithelium in the mucous membrane.
- **Dyskeratosis**: abnormal keratinization occurring prematurely within individual cells or groups of cells below the stratum granulosum.
- **Vacuolization**: the formation of vacuoles within or adjacent to cells and often confined to the basal cell-basement membrane zone area.
- **Cellular** or **epithelial dysplasia**: an epithelial anomaly of growth and differentiation often indicative of an early neoplastic process.
- **Metaplasia**: cells of one mature, differentiated type are replaced by cells of another mature, differentiated type.
- **Atypia**: deviation from normal or a state of being not typical. Atypical cells are not necessarily cancerous.
- **Colloid bodies (also called Civatte bodies)**: these apoptotic keratinocytes are oval or round, immediately above or below the epidermal or epithelial basement membrane.
- **Hydropic (liquefaction) degeneration**: basal cells become vacuolated, separated, and disorganized.
- **Hyaline bodies**: necrotic keratocytes; also termed colloid bodies, Civatte bodies, and apoptotic bodies.

## Standard Abbreviations for Prescribers

<b>ac</b> (before meals)	<b>ml</b> (millilitre)	<b>sy</b> (syrup)
<b>ad lib</b> (as desired)	<b>NaF</b> (sodium fluoride)	<b>tab</b> (tablet)
<b>ASAP</b> (as soon as possible)	<b>prn</b> (as needed)	<b>tbsp</b> (tablespoon)
<b>bid</b> (twice a day)	<b>q</b> (every)	<b>tid</b> (three times a day)
<b>btl</b> (bottle)	<b>q2h</b> (every 2 hours)	<b>top</b> (topical)
<b>c</b> (with)	<b>q4h</b> (every 4 hours)	<b>tsp</b> (teaspoon)
<b>cap</b> (capsule)	<b>q6h</b> (every 6 hours)	<b>oint</b> (ointment)
<b>crm</b> (cream)	<b>q8h</b> (every 8 hours)	<b>OTC</b> (over the counter)
<b>disp</b> (dispense on a prescription label)	<b>q12h</b> (every 12 hours)	<b>oz</b> (ounce)
<b>elix</b> (elixir)	<b>qam</b> (every morning)	<b>p</b> (after)
<b>g</b> (gram)	<b>qd</b> (every day)	<b>pc</b> (after meals)
<b>gtt</b> (drop)	<b>qhs</b> (every bedtime)	<b>PO</b> (by mouth)
<b>h</b> (hour)	<b>qid</b> (four times a day)	<b>U</b> (unit)
<b>hs</b> (at bedtime)	<b>qod</b> (every other day)	<b>ut dict</b> (as directed)
<b>iu</b> (international units)	<b>qpm</b> (every evening)	<b>visc</b> (viscous)
<b>IV</b> (intravenous)	<b>qsad</b> (add a sufficient quantity to equal)	<b>wk</b> (week)
<b>l</b> (litre)	<b>qwk</b> (every week)	<b>yr</b> (year)
<b>liq</b> (liquid)	<b>Rx</b> (prescription)	
<b>loz</b> (lozenge)	<b>s</b> (without)	
<b>mg</b> (milligram)	<b>sig</b> (patient dosing instructions on prescription label)	
<b>min</b> (minute)	<b>sol</b> (solution)	
	<b>stat</b> (Immediately)	