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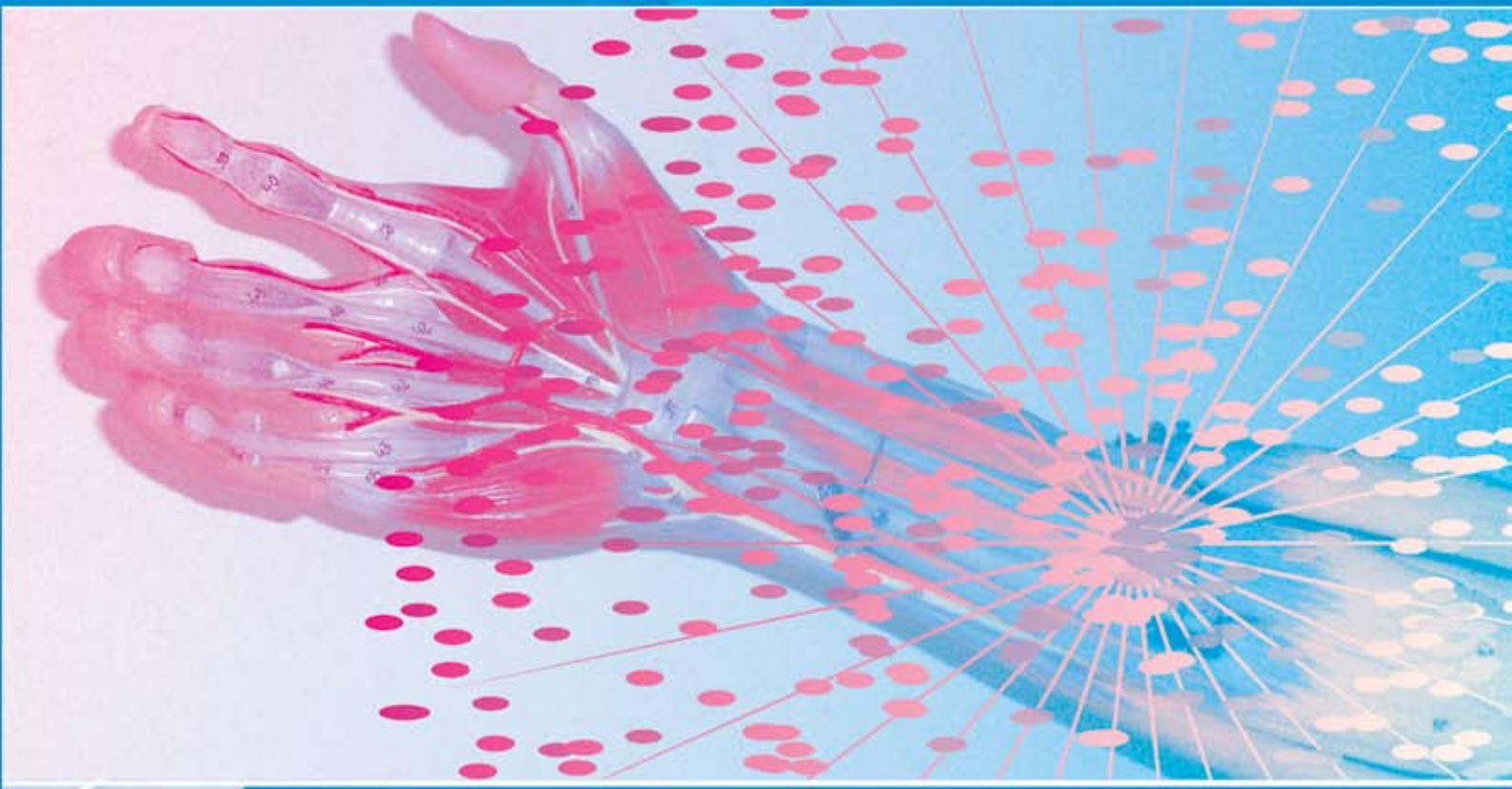

A Peer Reviewed International Journal for the Advancement of Clinical Skills
- 'docendo ac discendo' - 'by teaching and learning'

In this issue:

Executive Board

IJOCS
DOCENDO AC DISCENDO

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The International Journal of Clinical Skills looks forward to contributing positively towards the training of all members of the healthcare profession.

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Foreword

Globalisation and Clinical Skills

The International Journal of Clinical Skills (IJOCS) – the new road to new skills? Maybe – but it has certainly opened a platform for the globalisation of clinical skills. The World Health Organisation's (WHO) programme on globalisation targets public health risks, security and outcomes. Driven by the concept of "global public goods" and cross-border health risks, the underpinning issue is to promote health for the poor by way of achieving national health targets. As with the IJOCS, the WHO strategy seeks new technologies in the clinical arena to provide investigative tests – with the WHO being particularly interested in those tests which are suitable for developing countries along with new drugs for endemic diseases. The aims are indeed noble. Investigative and therapeutic technologies create a vacuum for the dissemination, sharing and globalisation of clinical skills, which remain the main asset and commodity which clinicians of poorer nations exercise, promote and share. The IJOCS has released a bolt for health professionals to do just that – share knowledge.

The provisions of the healthcare industry in developed countries by sheer volume and demand, streamlines clinical skills into sub-specialised areas. Clinicians (medical, paramedical and nursing) in these areas gain clinical expertise that are unique to their field and emerge from rich patient-clinician interactions. The clinical skills of dealing with children with disabilities, rehabilitation medicine and terminal care are mere examples that are deficient in the poorer health economies that spend the best part of their human resources to combat diseases of malnutrition and poor sanitation.

The IJOCS provides a global resource centre for sharing and promoting clinical skills between clinicians and health professionals. Senior clinicians, who practiced medicine during the last four decades, will have recognised a gradual and progressive pattern of dependence on technologies with less reliance on clinical skills. The IJOCS provides a platform for sharing and debating the inter-phase and interactions between new technologies and clinical skills. It promotes the development of a new layer of clinical expertise that will emerge from the interpretation, application and/or exclusion of new technologies, for the benefit of clinical care.

I trust that clinicians practicing in poorer health economies will enhance the Journal by sharing their clinical skills and knowledge. Their special expertise of managing clinical needs, within restricted resources, expectedly stimulates the human ingenuity and creativity, leading to the development of clinical skills suitable for each unique circumstance. I, for one, will be actively supporting the IJOCS innovative approach to collaboration of skills. The IJOCS will provide a vehicle for the transmission of these skills across the globe for sharing expertise between different health economies to enrich the overall clinical skills arena.

Hippocrates recognised the professional responsibility of the individual clinician by stating that physicians "must have a wealthy …medical knowledge, clinical skills, medical ethics, interpersonal skills,…". The IJOCS improves the physician's opportunity to enhance his/her clinical skills "by teaching and learning".

Dr Atef R Markos FRCOG FRCP

Examination of the ear: a structured teaching resource

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Abstract

Structured clinical examinations are widely used for assessment of medical students. We have previously proposed that a portfolio of structured teaching resources for individual clinical skills would be beneficial to students, and present a further example of such a teaching pack for examination of the ear and otoscopy.

Background

Medical students and doctors working in training posts have their clinical and procedural skills assessed regularly. Widely used methods of assessment include the formal, Objective Structured Clinical Examinations (OSCE) [1], and less formal, but nonetheless structured tools such as Direct Observation of Procedural Skills (DOPS) [2].

We have previously discussed the importance of giving medical students explicit guidance about the subjects in which they are to be examined, in order to make the objective structured assessments both fair and a useful learning experience, and have used the teaching and assessment of fundoscopy as an example of a structured teaching resource [3]. We now present a similar example for examination of the ear.

Methods

We have created a structured teaching pack about examination of the ear and otoscopy in the format of a four-page booklet. The first three pages are subdivided as follows:

1. Background & Anatomy / Physiology
2. Clinical Pictures, each with a brief explanation
3. Sequence of Examination

The fourth page is an adapted version of the Sequence of Examination, to be used as a marking scheme for assessment, and is not shown here.

Results

See Appendix 1.

Discussion

As discussed before [3], our structured teaching resource is useful to students and teachers alike. It uses the principles outlined in Miller's triangle [4] to tie together the core sciences of anatomy and physiology ("knows"), with examples of common pathology ("knows how") and structured clinical examination ("shows how"), and is explicit in the level of knowledge expected of the student.

In this examination pack, the first page justifies the importance of the ENT examination to the student, and summarises some relevant anatomy and physiology. The second page is a series of annotated pictures of common pathology. The third describes a logical, structured examination of the ear, in the same manner as would be expected in an OSCE. It includes all areas that may be examined, including communication and presentation skills, hand hygiene, etc. The final page is an adapted version of the Sequence of Examination that may be used for assessment by informal clinical teachers on the ward, for example consultants or registrars.

We have described how to use the clinical skills teaching pack in depth in a previous article. This is summarised as follows; each stage is repeated until the student feels confident to proceed to the next: -

- Student studies the teaching pack.

- Peer assessment is performed, guided by the Sequence of Examination in the pack. Feedback is given along the lines of Pendleton's rules (student identifies positive points, assessor reinforces these and discusses the skills which were used, etc) [5].
- Assessment by clinical supervisor (e.g. Consultant, Clinical Skills tutor, Registrar). Feedback is given as before.
- Examination of genuine patients.

Conclusion

We have presented an example of a structured teaching resource for use by medical students and their assessors. This resource pack may be adapted to use with other clinical skills, particularly those laid out in the UK General Medical Council's document, 'Tomorrow's Doctors' (e.g. venepuncture, suturing) [6]. A number of similar teaching packs on different topics may be put together to form part of a larger portfolio to be used by medical students as they progress towards qualification as a junior doctor.

Acknowledgements

All pictures reproduced with kind permission from Dr Kevin Kavanagh MD, FACS. Further pictures and video clips may be found on his website, www.entusa.com.

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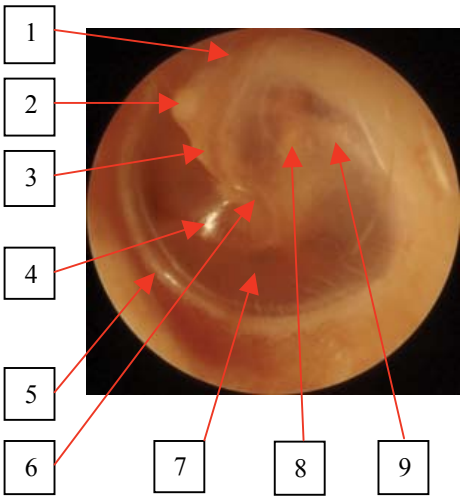
Appendix 1

Examination of the Ears

Background
ENT pathologies account for 10 – 20 % of consultations in General Practice, and this figure rises to about 50% in GP consultations involving children. ENT referrals currently constitute the third largest group of patients referred to hospital specialist clinics. ENT examination also plays a part in general paediatrics, plastic surgery, neurology and neurosurgery, dermatology, and general medicine. Hence, a good working knowledge of ENT and a basic competence in examination of the head and neck is essential to many doctors.

Anatomy & Physiology

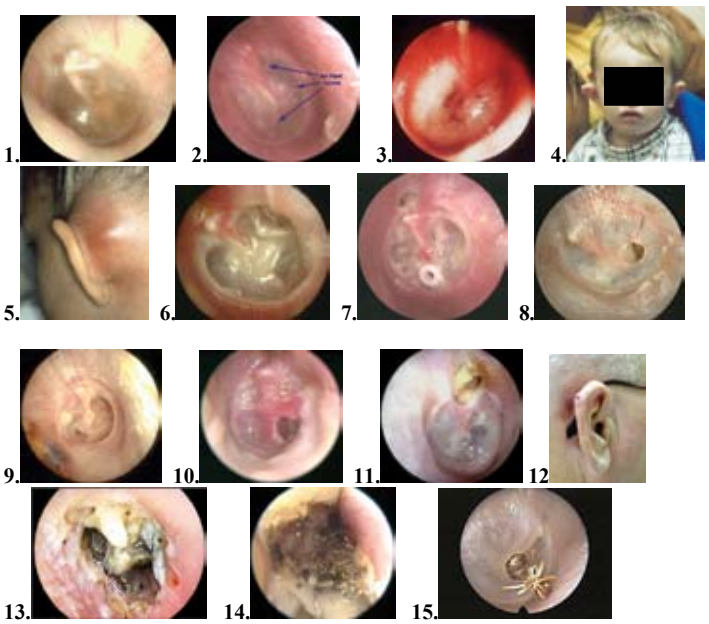
- The ear is divided into external ear (pinna and ear canal), middle ear (tympanic membrane, middle ear cleft, ossicular chain, Eustachian tube), and inner ear (cochlea and vestibular apparatus).
- The function of the ear is hearing and balance.
- Sound is conducted through the external auditory meatus, across the tympanic membrane and ossicular chain to the oval window. Transmitted into cochlea where sound energy is transformed into nerve impulses.
- The organ of balance is the vestibular apparatus (labyrinths, saccule, utricle). It senses rotational and linear acceleration.
- The facial nerve and some of its branches are intimately related to the structures of the ear.
- The ear canal is an elongated S-shaped tubular structure lined with skin. The outer 1/3 is hair bearing, has a cartilage skeleton and contains ceruminous glands (modified apocrine sweat glands), and sebaceous glands, which together produce cerumen (wax). The skin of the inner 2/3 bears no hair and is embedded in the temporal bone. The mastoid process lies posterior to the pinna.
- Features of the tympanic membrane seen on otoscopy include the pars tensa, pars flaccida, umbo, light reflex, handle and lateral process or malleus, and sometimes the chorda tympani, long process of the incus and incudostapedial joint.
- The innervation of the ear canal is via CN V_3, VII and X. Pain may therefore be referred to the ear from a number of other sources.



Otoscopic View of Left Tympanic Membrane (TM)

1. Pars Flaccida (Attic)
2. Lateral Process of Malleus
3. Handle of Malleus
4. Light Reflex
5. Annulus
6. Umbo
7. Pars Tensa
8. Long Process of Incus
9. Chorda Tympani

Clinical Pictures



1. Serous otitis media (Glue Ear). Note dull amber colour of TM. Left ear.
2. Serous otitis media. Note bubbles and air fluid levels in middle ear. Left ear.
3. Acute otitis media. Bulging, erythematous TM with pus-filled middle. Right ear.
4. Acute masoiditis. Pinna protruding laterally. Right ear
5. Acute mastoiditis. Pinna protruding. Tender, boggy mass over mastoid process. Left ear.
6. Retracted pars tensa of TM. Long process of incus, incudostapedial joint, stapes and promontory all visible. Left ear.
7. Grommet (ventilation tube). Note attic retraction. Left ear.
8. Small central pars tensa perforation. Left ear.
9. Large (subtotal) pars tensa perforation. Left ear.
10. Marginal perforation. Increased risk of cholesteatoma. Left ear.
11. Attic retraction containing cholesteatoma. Right ear.
12. Basal Cell Carcinoma of pinna. Right ear.
13. Acute otitis externa. Canal filled with infected debris.
14. Fungal otitis externa (otomycosis). Note fungal hyphae and spores.
15. Foreign body in canal. Right ear.

Examination of the Ears Sequence

Introduction, Explanation, Consent, Position

- Wash hands, introduce yourself, explain what you would like to do and gain verbal consent, seat patient comfortably on a chair (small children on parent's lap), ask which is the better hearing ear and start with this side. Ask if there is any tenderness before touching the patient.

General Inspection and Examination

- Look for hearing aids, facial palsy, dysmorphic features.

Examination of Pinna and Mastoid

- **Inspect** using a torch or headlight for adequate illumination. Look in front and behind the pinna for discharge, inflammation, scars (commonly in postaural sulcus or anterior to upper part of pinna), skin lesions, pinna deformity, accessory auricles, and sinuses. Inspect the mastoid process for skin lesions and signs of inflammation. Compare both ears from in front for symmetry.
- **Palpate** for tenderness over mastoid, pinna and tragus.

Otoscopy

- Hold the otoscope in the same hand as the ear you are examining (e.g. right hand for right ear) with its handle pointing upwards and forwards away form the ear. The handle of the otoscope should be held between your thumb and index finger with your little finger braced against the side of the patient's face.
- With your other hand, gently pull the pinna superiorly, laterally and posteriorly (inferiorly and posteriorly in children) and insert the tip of the speculum into the external auditory meatus.
- Inspect the full length of the **canal** and the **tympanic membrane**. Orientate yourself on the drum by finding the handle and lateral process of the malleus. Systematically examine the **pars tensa** and **pars flaccida**, noting the colour, translucency and any bulging of the drum. Look for discharge, crusting, perforations and note their position.
- Assess mobility of the eardrum by asking the patient to perform a Valsalva manoeuvre or by using a pneumatic ototscope.

Clinical Hearing Tests

- **Free field voice testing:** Sit at arm's length behind the patient and test one ear at a time. Mask sound from the non-test ear by applying gentle pressure in a small circular motion to the tragus with your index finger. Ask the patient to repeat two figure numbers spoken with whispered voice, conversational voice and shouting at a distance of about 60cm.
- **Tuning fork testing:** Perform Rinne's and Weber's tests using a tuning fork at 512kHz to help differentiate between a conductive and sensorineural hearing loss.

Essential Extras

- Cranial nerve examination, particularly CN VII
- Formal audiological testing

Professionalism

- Maintains dignity of patient, communicates sensitively with patient, thanks patient, washes hands, writes appropriate record

Presentation of findings

General > Important positive findings > Important negative findings including extended examination > Clinical Conclusion.

Clinical Skills Lab (CSL)

The Clinical Skills Lab database will comprise information on over 200 clinical skills, broadly separated into:

- ➔ History taking skills
- ➔ Communication skills
- ➔ Clinical examination/interpretation skills
- ➔ Practical skills

Not only will this valuable resource provide material to students as a learning tool and revision aid, for example, OSCEs, it will also offer educational materials for teachers from all disciplines, allowing some standardisation of practice. The Clinical Skills community will also be encouraged to contribute, making this database interactive.

CSL is a free not for profit database. Visit **www.ijocs.org** for access

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