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CASE-BASED LEARNING: THE POST-GRADUATE CHALLENGE
Some of these ‘guys’ think they know everything; how do you teach them ANYTHING?

How do you teach the philosophy that ‘you don’t know what you don’t know until you know you don’t know it?’

How do you teach the concept of lifelong learning?
Case-based learning: CBL

- CBL+ Socratic Method = Competent clinicians
  - Board-ready graduates
  - Astute clinicians
  - Critical reviewers of research and literature
Provide a strong didactic component to prepare graduates to successfully achieve ‘Diplomate’ status with the American Board of Endodontics

Strong clinical program...

- Where residents base their treatment on the best scientific evidence available
- Where residents attain the skills (clinically and didactically) to critically assess literature and research
Program goals...

- Develop experts in our field...
  - To educate general dentists, specialists and staff
  - To continue contributing in a positive way to our profession: locally, nationally, internationally
- Introduce the scientific process of research
How do we incorporate CBL?

- Each and every case is reviewed with a faculty member
  - Medical history
  - Diagnosis
  - Radiographic interpretation
  - Etiology
  - Treatment options
  - Critical assessment of treatment
  - Prognosis
Weekly Surgery Conference

- Resident Cases
- Faculty Cases
  - Medical component
  - Odontogenic and non-odontogenic lesions
  - Atypical facial pain
Amy M.

- 46 year old white female
- Ref by Dr. Gilbaugh for eval #14
- Pt noted a bump on her gum about 6 months ago
- Pt has history of psuedomembranous colitis requiring hospitalization
What is pseudomembranous colitis?

- Caused by overgrowth of *Clostridium difficile*
  - Due to use of broad-spectrum antibiotics
  - Heavy metal intoxication
  - Sepsis
  - Organ failure
ABx

- Clindamycin (2-20%)
- Ampicillin/amoxicillin (5-9%)
- Oral antibiotics more often causative than parenteral
Diarrhea most common symptom
- Abdominal cramps
- Tenderness
- Fever

- May occur up to 8 weeks after drug administration
- Severe dehydration, metabolic acidosis, hypotension, peritonitis, toxic megacolon are serious sx of untreated disease
Pt noted that sinus tract disappeared right after treatment, but swelling then occurred about three days later.
Treatment Options?

- Surgical Perforation repair
- Non-surgical perforation repair with internal matrix
- Extraction
- Root Amputation
Stripping perforation verified with amalgam
Root Amputation Success

  - Evaluated 100 cases of root resections at ten years. *There were 38 failures.*
    - 84% of the failures occurred after five years.
    - 47% of the failures were attributed to fracture of the remaining root or roots.

- Thirty-two consecutively treated patients were included in this study of 49 root-resected molars that were under regular recall of 3 to 6 months for a mean of 11.5 years (2 to 23 years).
- 92% of all resected molars survived an average of 12 years. Teeth failed because of recurrent caries or for endodontic and strategic reasons.
- If proper treatment is rendered periodontally involved molars can be maintained for a long period of time and serve successfully as abutments in full-mouth restorations.
Evaluated 28 cases of root resections at ten years. There was a 32% failure rate.

- There was one root fracture
- Two failures were periodontal
- Two failures were attributed to endodontic-periodontic lesions
- Three failures were attributed to endodontics
- One failure was related to loss of retention
Results of various studies were reduced to a common denominator to allow comparison. The compiled results of studies on hemisection revealed an average reported failure rate of 13.1%. This rate was compared with results of studies on implants; the failure rates of the two treatment alternatives are not substantially different. Thus, because hemisection is a relatively simple, inexpensive treatment with a good chance of success (given appropriate case selection), it should always be considered as an option before molar extraction.
Bottom Line?

- Implant ~ $3000.00
- Root amputation ~ $395.00

Maintaining the natural dentition? Priceless.
Mock Oral Board

- Twice/year
- Involves all residents (together)
- Quite similar to ABE Oral Exam

Goals

- Provides an experience like the Oral Exam
- Realize what scope and breadth of knowledge is required
• 59 year-old caucasian female

• Medical history is significant for Hypertension, Diabetes (type II), Osteoarthritis, Hypothyroidism, and multiple occurrences of deep vein thrombosis. Her medications are: Coumadin, Ibuprofen, Synthroid, Accupril, Hydrochlorothiazide, and Glucophage.

• The patient’s chief complaint is intermittent spontaneous pain, lower left, which is exacerbated by touch (she indicates the area of #21 – 22).

• Clinical exam reveals no edema or sinus tract in the mandibular left quadrant; there is tenderness to palpation over the apex of #22.
Please describe what you see on the radiograph.

What are the potential etiologies of failure in this case? What is your differential diagnosis?

What types of microorganisms would you expect to be participating in this process?

What are the options for treatment? Advantages/disadvantages for retreatment? For surgery?

What are the success rates for non-surgical retreatment? Surgical retreatment?
Are there any considerations in the patient’s current dental status that might influence your recommendation for treatment?

If surgical treatment has been recommended, what, if any findings in the patient’s medical history might impact treatment?

What strategies might you employ to improve hemostasis?

In selecting a root end filling material, what material would you choose? Why?

Is there any indication that guided bone regeneration might improve healing?
Goals of this process...

- Awareness of the level of knowledge necessary and types of questions
- Practice
The Final Experience...

- The much-dreaded ‘Exit Exam’
  - Given to graduating residents
  - Two parts
    - Portfolio submission
    - Oral exam
Exit Exam

- Portfolio
  - Compilation of 15 best cases, following Part II ABE board format as much as possible

- Oral Exam
  - Two cases (30 minutes each)
  - Two on one
Examiners...

- One who is a past ABE board director
- One who is an Iowa graduate who has successfully achieved ABE Diplomate status
  - Examiners review and comment on portfolios and develop the exam cases
Finally...

- It’s over.
Questions?

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