

# ASSIGNMENT INSTRUCTIONS

**\*\*NB – only applicable for 2016 and earlier trainees who had already submitted assignments. Later trainees to submit case histories and a research project – instructions on website\*\***

Reviewed January 2017

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## ASSIGNMENT REQUIREMENTS

There is a requirement for **10 case histories** to be submitted as an essential component of the course work for the year:

- 5 Short Cases to be chosen from topics covered within Modules 4, 5, 8, 9 and 10 (**one assignment for each module is required**).
- 1 Communication Case.
- 4 Extended Cases – One each of: Acute Medical, Acute Surgical, Acute Orthopaedics, and Acute Plastic Surgery.

Copies of submitted work should be kept by the candidate in case of dispute or papers going missing.

Any variations from the requirement should be discussed and approved prior to submission of the work.

**Retrospective approval will not be given.**

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### DEADLINES FOR CASE HISTORIES:

Cases 1 - 2	To be received by March 31
Cases 3 – 5	To be received by June 30
Cases 6 - 8	To be received by August 31
Cases 9 – 10	To be received by October 30

**LATE ASSIGNMENTS WILL BE PENALISED.**

**If you anticipate you will have difficulty meeting a particular deadline please contact the College *in advance* to discuss this and apply for an extension of time.**

You may submit the case histories in whichever order you choose. However, be aware the extended cases will require much more effort than the short cases, and it would be prudent not to leave them all until last.

**TITLE PAGE**

Each assignment should be typed, and accompanied by a Title page with the following information:

<b>Urgent Care Course Assignment:</b>	Type of case and number  eg Short Case 1 module 4 or Extended Case 3 Acute Medical or Communication Case
<b>Name:</b>	
<b>Date:</b>	
<b>Word count introduction (if applicable):</b>	Extended Cases only, Maximum of 250 words.
<b>Word count case description:</b>	Maximum of 250 words.
<b>Word count discussion:</b>	Short Cases and Communication <b>Case ideally between 300-400 words.</b>  Extended Cases Maximum of 1000 words.

## ASSIGNMENT DELIVERY

### EMAIL (PREFERRED)

assignments@rnzcuc.org.nz

### POSTAL

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Auckland 1072

## REFERENCING AND PLAGIARISM

These assignments should be your own work, based on a case you have seen.

Where you include information from another source, this should be duly recognised using standard medical referencing format. Presenting someone else's material without acknowledging them (ie referencing) is considered plagiarism, and will not be tolerated.

Some examples of plagiarism could be:

- Direct copying, or "cutting and pasting".
- Not using quotation marks or paraphrasing when including someone else's work.

Where plagiarism is detected, the assignment will fail.

For more information and examples of referencing go to The US National Library of Medicine guide:

[http://www.nlm.nih.gov/bsd/uniform\\_requirements.html](http://www.nlm.nih.gov/bsd/uniform_requirements.html)

Additionally the University of Auckland has very good referencing resources which may be useful:

<http://www.library.auckland.ac.nz/subject-guides/med/setref-vancouver.htm>

or

<http://www.cite.auckland.ac.nz/index.php?p=overview>

## LITERATURE SEARCH AND ARTICLE APPRAISAL

For more information about searching for articles in a medical database (eg pubmed), read the following:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2127107/pdf/9251552.pdf>

For more information about appraising articles here are a couple of articles to get you started:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2127173/pdf/9253275.pdf>

<http://www.sma.org.sg/smj/4603/4603ebm1.pdf>

## SHORT CASE HISTORY INSTRUCTIONS

These are in the format of a case description followed by a brief discussion relating best practice principles to the case at hand.

<b>Word Count Case Description:</b>	<b>MAXIMUM 250</b>
<b>Word Count Case Discussion:</b>	<b>MAXIMUM 400</b>

An introductory paragraph is not required.

The Case Description should be presented in the usual form that clinical notes take and documented to a high standard – standard terminology should be used, and common abbreviations are accepted. **Ensure that a diagnosis, working diagnosis / clinical impression, or differential diagnosis is recorded, and it must include a summary of the case outcome.** It should also give the reader an idea of context – please include a description of the patient seen (NO identifying features should be included), the type facility they presented to, and the day / time seen.

There are several examples of Case descriptions in the Sample assignments provided.

The discussion should reflect on the issues of the case, and compare actual management to ideal management. A comprehensive literature review is not required – one or two well-chosen references will suffice.

## SHORT CASE MARKING SCHEDULE

<b>Case Description:</b> Accuracy: - Precision and completeness of case description. - Reflects current standard practice.	         
	<b>/2 Marks</b>
	<b>/1 Marks</b>
Complexity of case and relevance to Urgent Care.	
<b>Structure:</b> - Concise (word count). - Presentation and layout (easy to follow). - Syntax / grammar / spelling. - Unambiguous.	
	<b>/1 Marks</b>
<b>Discussion:</b> Analysis – logical discussion of the issues.	<b>/4 Marks</b>
Self-reflection: - What was learnt, how it can be applied to your practice.	<b>/2 Marks</b>
<b>TOTAL</b>	<b>/10 Marks</b>

Marks will be credited for:

- Use of relevant material in each case, with important positive and negative findings included.
- Descriptions of appropriate management of a case, or identifying mistakes in management.
- Accurate terminology.

- Use of relevant and up to date references.
- Willingness to reflect on, and learn from mistakes.
- Higher marks will be awarded where case histories demonstrate that the trainee has considered/researched best practice medicine, and compared this to what actually happened during the course of the consultation.

Marks will be deducted for:

- Inappropriate issues or cases.
- Incomplete clinical notes (case description).
- Unsafe practice, where this is not acknowledged.
- Poor referencing.
- Excessive length.
- Late assignments.
- Directly copying reference material / textbooks in the discussion. Remember to discuss “Best Practice” and compare to your individual case. i.e. what was done well and what wasn’t and what was learnt.

## COMMUNICATION CASE HISTORY INSTRUCTIONS

The format of this assignment should follow that of a Short Case (ie Case description followed by brief discussion); however the focal point of the discussion will differ. The important learning point in this case is your communication and self-reflection skills.

<b>Word Count Case Description:</b>	<b>MAXIMUM 250</b>
<b>Word Count Case Discussion:</b>	<b>MAXIMUM 400</b>

You should choose a “difficult” case – ie conflict within the consultation, complaint generated, or some other communication breakdown resulting in a poor outcome.

An introductory paragraph is not required.

The Case Description should be presented in the usual form that clinical notes take and documented to a high standard – standard terminology should be used, and common abbreviations are accepted. **Ensure that a diagnosis, working diagnosis / clinical impression, or differential diagnosis is recorded, and it must include a summary of the case outcome.** It should also give the reader an idea of context – please include a description of the patient seen (NO identifying features should be included), the type facility they presented to, and the day / time seen.

The discussion should define what the poor outcome was (this may not be apparent in the clinical case description), then focus on issues of communication within / or related to the consultation – for example what do you think went wrong? What would you do differently? What have you learnt? What communication strategies would you use next time? It may help to consider all aspects of communication – eg verbal and non-verbal cues, written material, clinical team communication, etc.

### COMMUNICATION ASSIGNMENT MARKING SCHEDULE

<b>Case Description:</b> Accuracy: <ul style="list-style-type: none"> <li>- Precision and completeness of case description.</li> <li>- Reflects current standard practice.</li> </ul>	<b>/2 Marks</b>  <b>/1 Mark</b>
Complexity of case and relevance to Urgent Care.	
<b>Structure:</b> <ul style="list-style-type: none"> <li>- Concise (word count).</li> <li>- Presentation and layout (easy to follow).</li> <li>- Syntax / grammar / spelling.</li> <li>- Unambiguous.</li> </ul>	<b>/1 Mark</b>
<b>Discussion:</b> Analysis – logical discussion of the issues.	<b>/4 Marks</b>
Self-reflection: <ul style="list-style-type: none"> <li>- What was learnt, how it can be applied to your practice.</li> </ul>	<b>/2 Marks</b>
<b>TOTAL</b>	<b>/10 Marks</b>



Marks will be credited for:

- Use of relevant material in each case, with important positive and negative findings included.
- Descriptions of appropriate management of a case, or identifying mistakes in management.
- Accurate terminology.
- Use of relevant and up to date references.
- Willingness to reflect on, and learn from mistakes.

Marks will be deducted for:

- Inappropriate issues or cases.
- Incomplete clinical notes (case description).
- Unsafe practice, where this is not acknowledged.
- Poor referencing.
- Excessive length.
- Late assignments.

## EXTENDED CASE HISTORY INSTRUCTIONS

This is an opportunity to present a researched discussion around an issue of acute management you have had cause to reflect on. This should be centred on a case you have been involved in, and reflect issues of acute care within a level 2 facility or equivalent. It should be relevant to the subject (eg acute medical, surgical, orthopaedic, etc. practice). *If you are unsure about the suitability of your chosen case/topic – ask!*

*The best Extended Cases may be selected for publishing.*

<b>Word Count Introduction:</b>	<b>MAXIMUM 250</b>
<b>Word Count Case Description:</b>	<b>MAXIMUM 250</b>
<b>Word Count Case Discussion:</b>	<b>MAXIMUM 1000</b>

### INTRODUCTION

This should summarise the issues within the case you will describe, and introduce your topic – for example, background information (incidence/history/epidemiology/anatomy/pathology/physiology...etc. as appropriate) and how it is relevant to your practice (why you chose it).

### CASE DESCRIPTION

This should be presented in the usual form that clinical notes take and be documented to a high standard – standard terminology should be used, and common abbreviations are accepted. ***Ensure that a diagnosis, working diagnosis / clinical impression, or differential diagnosis is recorded, and it must include a summary of the case outcome.*** It should also give the reader an idea of context – please include a description of the patient seen (NO identifying features should be included), the type facility they presented to, and the day / time seen.

### CASE DISCUSSION

This should be a well-researched, referenced and in-depth discussion of your chosen topic which ideally will be an aspect of the case you present. Your discussion should be based around a real clinical issue you have encountered, and not a superficial review of a large subject. For example, investigating the diagnostic utility of CRP for appendicitis, rather than a broad general discussion of appendicitis. You will find the narrower your focus is, the more meaningful your conclusions will be in terms of influencing your clinical practice. It will help to define the scope of your discussion early on – what question/s are you trying to answer?

The body of your discussion should summarise the literature around your topic – for example current opinion, controversies, relevant studies, variation in local practice, trial results. It should also demonstrate your own critical appraisal of the literature – for example, are there biases in the study design, how big is the sample size, do the authors have conflicts of interest, do you agree with their conclusions? Lists or bullet points with information easily gleaned from a textbook are NOT what is required.

Then summarise your findings, and give YOUR conclusion in your summary paragraph, including a statement of how this may influence your practice. Ensure you relate this back to your case.

Example assignments are included for your reference – ***please use these.***

References should be relevant and up to date, and may include journal articles, websites, textbooks, or local guideline documents. ***You must reference a minimum of 5 journal articles*** – ie you may not reference websites only. References will be checked by the examiner.

## MARKING SCHEDULE

<b>Introduction:</b> <ul style="list-style-type: none"> <li>- Description of issues and introduction of topic.</li> </ul>	<b>/1 Mark</b>
<b>Case Description:</b> Accuracy: <ul style="list-style-type: none"> <li>- Precision and completeness of case description.</li> <li>- Reflects current standard practice.</li> </ul> Complexity of case and relevance to Urgent Care.	<b>/2 Marks</b>  <b>/1 Mark</b>
<b>Structure:</b> <ul style="list-style-type: none"> <li>- Concise (word count).</li> <li>- Presentation and layout (easy to follow).</li> <li>- Syntax / grammar/ Spelling.</li> <li>- Unambiguous.</li> </ul>	<b>/1 Mark</b>
<b>Discussion:</b> <ul style="list-style-type: none"> <li>- Critical thinking, appraisal and analysis.</li> <li>- Comprehensiveness, coherence, and logic of discussion / conclusions.</li> </ul>	<b>/6 Marks</b>
<b>Self-reflection / learning:</b> <ul style="list-style-type: none"> <li>- Thoughtful analysis.</li> <li>- What did you learn?</li> <li>- How it can be applied to your practice?</li> </ul>	<b>/3 Marks</b>
<b>Referencing:</b> <ul style="list-style-type: none"> <li>- Quality of references.</li> <li>- Correctly cited.</li> </ul>	<b>/1 Marks</b>
<b>TOTAL</b>	<b>/15 Marks</b>

Marks will be credited for:

- Use of relevant material in each case, with important positive and negative findings included.
- Descriptions of appropriate management of a case, or identifying mistakes in management.
- Accurate terminology.
- Use of a variety of relevant and up to date references.
- Good summary of current literature with evidence of critical appraisal.
- Willingness to reflect on, and learn from mistakes.
- Higher marks will be awarded where case histories demonstrate that the trainee has considered/researched best practice medicine, and compared this to what actually happened during the course of the consultation.

Marks will be deducted for:

- Inappropriate issues or cases.
- Incomplete clinical notes (case description).
- Unsafe practice, where this is not acknowledged.
- Poor referencing.
- Excessive length.
- Late assignments.

# EXAMPLE ASSIGNMENTS

## SAMPLE SHORT CASE HISTORY

### Case History - A case of croup.

Master GW. 3 yr. old boy. Presented to the After-hours clinic with father. 29/5/2011, Sunday 2300hrs

PC- SOB and stridor

HPC- Cough, runny nose one day. No fever. Tonight woke up distressed, SOB and barking cough. Parents tried to give him paracetamol but he got very upset. Father put him in the car and brought him in. Continued to have barking cough and continued to get worse. Now lethargic, difficult and noisy breathing. No drooling, not blue.

Past Hx- Nil. No Hx of Asthma. Fully immunised.

Meds- Nil, NKDA

Social Hx- lives with parents. Six year old brother also has a cold

O/E

Looks floppy, unwell, very distressed. Father carrying patient. Pale not cyanotic.

No drooling

Inspiratory and Expiratory stridor audible

Marked sternal wall retractions

Temp 37.6 C

HR 200/min, warm peripheries.

Sats 82% on RA, RR 40/min

Throat- no asymmetry. injected mucosa.

Chest - transmitted upper airway noises. Reduced AE.

HS 1+2

Impression- Severe Croup with significant airway compromise and at risk of respiratory arrest.

Management- Ambulance called. Sitting up with dad, 5mg of nebulised adrenalin with oxygen 6L. IV line placed. Improved immediately. Given oral dexamethasone 15mg (0.6mg/kg). Referred to Paediatrics for on-going care via ambulance on oxygen.

### Discussion

For patients with croup the differential to exclude are bacterial tracheitis, epiglottitis, retropharyngeal abscess and foreign body inhalation. Bacterial tracheitis is accompanied by high fever and toxic appearance. Epiglottitis has more sudden onset of high fever, dysphagia, drooling, sitting forward in 'sniffing' position. This patients' history is suggestive of typical croup with low grade fever, rhinorrhoea and cough.

The Westley scale is used to assess the severity of croup. This is based on the degree of inspiratory stridor, retractions, air entry, cyanosis and level of consciousness. This patient falls in the category of severe croup. IV line was inserted in case of circulatory collapse. In hindsight it was not necessary to insert the IV line as it made him more distressed likely worsening his symptoms. IV interventions perhaps should be reserved for altered mental status, dusky appearance, decreased retractions, decreased breath sounds or decreasing stridor which support imminent respiratory arrest.

Management of this patient otherwise was appropriate. I did have a dilemma about what dose of adrenalin to use having remembered dose of racemic adrenalin 1:1 in which case 0.5ml only should be administered via neb in comparison to 5ml of 1:1000. However the clinic guidelines as per the Starship guidelines recommends 1:1000 preparation 0.5ml/kg/dose, (max 5ml).

All patients with croup should receive dexamethasone as it prevents deterioration on day 2 or 3. A single oral dose of 0.15mg/kg is just as effective. Most research has been on 0.6mg/kg so the recommendation is still to use 0.6mg/kg for moderate to severe croup. Up to date recommends a maximum of 10mg and Starship guidelines recommend 12mg of dexamethasone. This patient received 15mg of oral dexamethasone. Perhaps a maximum of 12mg as per Starship should be used in future.

The other treatments such as nebulised Budesonide is as effective but not better than dexamethasone. Had the patient vomited this would have been an appropriate treatment. This is costly and not available at our clinic. IM or IV dexamethasone is another option.

This young patient with croup responded well to the adrenalin nebuliser. If he continued to deteriorate the paediatric team would have needed to be warned to have a paediatric anaesthetist ready for likely a difficult intubation.

## References

Alberta Clinical Guidelines Group: Guidelines for the diagnosis and management of Croup. Revised Jan 2008.

<http://www.albertadoctors.org>

Muniz A, Molodow RE, Defendi GL: Medscape. Pediatric Croup. Updated May 2011.

<http://emedicine.medscape.com/article/962972-clinical#a0217>

Shephard M, Gavin R: Starship guidelines. Croup. Dec 2009.

<http://www.starship.org.nz/assets/Uploads/Starship-Hospital-Content/Health-Professionals/Clinical-Guidelines/Croup.pdf>

Woods CR, Kaplan SL, Tochia MM: Approach to the management of Croup. Uptodate online. Jan 2011.  
<http://www.uptodate.com>

## SAMPLE SHORT CASE HISTORY

### Case History – Abdominal pain

Mrs AR 55YO female seen in Coastcare A&M at 1900 on 01/03/11

#### PC

Left sided abdo pain

#### HPC

5/7 generalised abdo pain

Pain now localising in LIF and extends around to the R hypochondrium

Bowels opened yesterday

Also c/o of RUQ pain with shoulder tip pain

No fevers or jaundice

Prone to constipation, passing hard stools

#### PMHx

Multiple previous bowel surgery? what

Hx of adnexal pathology

Type 2 diabetic

#### MEDS

Simvastatin, metformin, aspirin

#### O/E

Alert and interactive

Afeb, HR 85/min BP 140/85, CRT <2sec

Chest clear

Soft abdo, tender LIF with mass, RUQ tenderness? Murphies +ve, BS present

#### IMP

?Biliary colick

?Constipation

?Obstruction

#### PLAN

1. Enema
2. Buscopan
3. C/U recent bloods
4. Analgesia

No improvement with microlax. Pt to get fleet enema and have one tonight and tomorrow. To get FBC, LFT's done tomorrow and advised to attend NSH if pain intensifies. Pt called the following day. Good result with phosphate enema and pain resolved.



## Discussion

Abdominal pain is a common presentation to both emergency departments and community doctors making up 5% and 1.5% of visits respectively (1). Most are benign but 10% of these will require surgery for a severe or life threatening cause (1).

This case report exemplifies the dilemma faced by community Urgent Care physicians when working up abdominal pain. Diagnosing the cause of abdominal pain can be difficult and pre-existing morbidity can further confound the diagnostic process (2). Unfortunately no single test exists that is perfect for investigating abdominal pain. One study has demonstrated that 1 in 4 cases of appendicitis present with a normal white cell count (1) and only consensus opinion exists with regard to appropriate modalities of imaging. Even when investigated extensively, up to 40% of patients admitted to hospital with abdominal pain have no cause found (2).

Abdominal pain therefore does not lend itself easily to algorithmic evaluation. Best practice suggests that assessing abdominal pain requires an approach that relies on the likelihood of disease, patient history, physical examination, laboratory tests, and imaging studies (1). Over reliance on one particular arm of this assessment tree can lead to misdiagnosis and delays in the treatment and referral of sinister causes of abdominal pain. This is highlighted by the statistic that one in three patients that require surgery for abdominal pain present with at least one atypical feature on initial presentation (2).

The fulcrum around which these diagnostic tools must hinge therefore is the physician's intrinsic assessment of what lies before them. Simply put this is the physician's gut feeling or gestalt and its importance cannot be overstated in this situation. Evaluation of abdominal pain particularly in the community can be difficult and frightening. However reliance on your accumulated wisdom along with objective measures can ensure that the more serious cases are not missed.

## References

1. Cartwright SL, Knudson MP: Evaluation of acute abdominal pain in adults: Am Fam Physician. 2008 Apr 1;77(7): 971-8
2. Tsipouras S: Non abdominal causes of abdominal pain, finding your heart in your stomach: Aust Fam Physician. 2008 Aug;37(8): 620-2

## SAMPLE COMMUNICATION CASE HISTORY

### Communication Case History – sample 1

#### History:

Mr. C, 34 yo man presents to the ED at 2AM on a Sunday with a traumatic amputation of his R little finger.

#### PMHx:

Normally fit and well, no regular medications, NKDA, +smoker, +casual marijuana smoking, unemployed, heavily tattooed, RH dominant, immunised, no recent ADT.

#### HOPC:

Patient stated that he had been chopping meat with a butcher's knife and accidentally severed his R 5<sup>th</sup> digit. His wife "freaked out" and threw the finger out the window. Finger not retrieved after one hour search. Compression with kitchen towel used to control bleeding. No other injuries.

#### O/E:

Alert, agitated, some angry outbursts

T=37.3C, P=86, BP=130/76, RR=22, SatO2=98%, GCS=15/15, PERLA+6mm

R little finger amputated approximately 1cm above 5<sup>th</sup> MCPJ with 0.5cm of exposed bone cut obliquely. Some maceration and bruising of wound edge. No frank arterial bleeding. Some mild venous ooze. Capillary refill of distal stump 1sec, sensation intact. 5<sup>th</sup> MCPJ not involved. No other abnormality of hand, forearm, or arm noted.

**Xray:** Oblique amputation of proximal phalynx of R little finger at midpoint. Minimal fragmentation of remaining bone. No other fractures noted.

**Impression:** Traumatic amputation of proximal phalynx of R little finger

#### Plan:

Ring block and pressure irrigation

Analgesia

Augmentin 1.2g IV stat

NBM

ADT

Non-circumferential sterile pressure bandage + elevation

#### Outcome:

Patient referred to Plastics Registrar. Prior to Plastics review, the patient became verbally abusive to staff and self-discharged. He returned at 8AM was seen directly by the day Plastics Registrar and the digit terminalised in the OR that morning.

## CASE DISCUSSION

Most people who amputate a digit are compliant and appreciative of treatment. Mr C was not one of these patients. The poor outcome in his case was a delay in treatment and an increase in the possibility of complications (e.g. blood loss, infection). A further poor outcome was the stress created in the staff managing this patient. These poor outcomes, I feel, arose largely from a deficiency of communication between the patient and me.

Firstly, Mr C was terse which in turn made me frustrated and impatient. Also, I was doubtful of the veracity of the patient's story (i.e. How was he able to cleanly cut off only the little finger of his dominant hand if he was using a butcher's knife?). Although I was not accusatory in my history-taking, I could sense that the patient was aware of my suspicions. His tattooed appearance increased my bias. Although my questioning was relatively open-ended, the tone was not empathetic and my body language was closed (i.e. arms crossed, leaning against the wall). As my bias increased, it was difficult to perform a decent H+P and to have the patience to explain carefully to Mr R his need for further care. The consultation broke down and Mr R became increasingly impatient and aggressive. He made statement such as, "I've been waiting forever and none of you seem to be doing anything." Although I did try to assure him that that we were taking his case seriously, my tone and body-language, told a different story.

In the future such situations, I will seek to be more patient, use broad open questions, allow the patient to speak openly, and acknowledge the patients feelings. (1, 2) Providing the patient information in different forms—e.g. written summary of the surgery— might also be helpful. Also, I've noted the importance of keeping an 'open' body language, especially with patients that I may not inherently 'like' to avoid verbal-nonverbal mismatch. (3) Lastly, I have learnt that though I may not always like the patient I am seeing, they deserve respect, compassion and treatment to the best of my ability.

### REFERENCES:

1. Plutchik R. Emotions in the Practice of Psychotherapy; Chapter 9: Therapeutic communication. Arlington (VA), USA. American Psychiatric Press; 2001. 149-168.
2. Techniques of Therapeutic Communication. Available from: <http://www.lsc.edu/academics/nursing/CN%20I%20Forms/techstherapeuticcommunication.pdf>
3. Quill TE. Recognizing and adjusting to barriers in doctor-patient communication. Annals of Internal Medicine [1989, 111(1):51-57]

## SAMPLE COMMUNICATION CASE HISTORY

### Communication Case History – sample 2

#### Case Description:

**PC:** A 9 year old girl is brought in by ambulance after a school yard accident in which she has been hit across the forehead by a boy swinging a cricket bat. She suffered a 3cm laceration over the left eye brow, and was not knocked out.

**PMHx:** nothing of note, no medications and no allergies

**SHx:** She arrived with a Whanau member, and legal guardian could not be located.

**Exam:** Gapping 3cm wound, parallel to the left eyebrow. Bleeding was controlled by pressure. No forehead numbness. Periosteum was intact

**Imp:** There was no closed head injury. This was a simple forehead laceration.

**Plan:** This required anaesthetic, cleaning and suturing. The Whanau member had already written a letter of complaint during their wait, voicing her concern over the delay in treatment, giving her diagnosis and that the treatment should be to transfer her mokopuna to a plastic surgeon (over 500km away) for skin grafting.

**Outcome:** This was an angry, pushy patient (Whanau member) demanding inappropriate treatment requesting on behalf of a minor. I wanted to manage the child and asked that she leave to find the child's guardian. Anticipating a problem, I had the on call surgeon assess the child and confirm my treatment plan. A grandmother eventually arrived but not before a second letter of complaint was written again angry at the delay and saying that she was going to sue me if any scar was left. The child was brave and the wound was stitched without complication.

## CASE DISCUSSION

From the first moment I did not recognise this as a difficult situation. This was my first mistake. I identified my patient as the 9 year old with a "simple" head laceration requiring suturing. I was happy to proceed not appreciating that the challenge was the Whanau member, not the child.

I am not good at managing difficult patients. When they come at me with accusations of poor medical skills, I tend to reply defensively. This was my second mistake. This wasn't an emergency, and instead of stopping and taking the time with this lady, I minimised her issues and simply pushed on with my agenda. This simply escalated the confrontation with her rising anger matched only by her rising voice.

When things are going well and rapport is good you find that you can rapidly assess and treat these patients. But there must be a "plan B", for when it all goes sour.

"REBELS" (1) is a simple acronym that I have since learnt whose application would have been good for this situation. The model works to first **Recognise** there is a problem, express **Empathy**, establish clear **Boundaries**, **Emphasise** the patients best interest using inclusive **Language**, and finally to focus on **Solutions**. This may provide an approach to situations of challenging communication, the aim being a smooth consultation and better outcome. I failed to **recognise** the problem and simply pushed on with my agenda. Not addressing this gave the impression I was oblivious to her feelings.

I believe that she was demanding an inappropriate treatment. I tried to be clear with my **boundaries** but instead of dogmatically stating these, it may have been better to have acknowledged her plan, **emphasize** that we both had the child's best interest at heart and offered options, **including** her in the decision.

By generating **solutions** together, and not excluding her as I did, she may have come around to my treatment plan and adopted it as her idea.

I handled this poorly I can see that now. By not at first recognising the difficult interaction I just continued on and everything snowballed from there. These patients are infrequent but make up the predominant source of complaints and I now feel better prepared for the next one

**References:**

1) Hawkin SJ, Fox R, van den Brink R, Moir F. REBELS: An Approach to communication challenges in the consultation. NZFP Vol 35 number 4. August 2008: 274-277

## SAMPLE EXTENDED CASE HISTORY

### Introduction

Compartment Syndrome is an orthopaedic emergency which may threaten life and limb <sup>(1,2)</sup>. The most common cause is that of acute injury <sup>(1-4)</sup>, particularly in the context of a fracture <sup>(3,4)</sup>. However other case reports involve surgical positioning, vascular procedures, vigorous exercise and drug overdose <sup>(1-3)</sup>. Another interesting etiology in the era of modern medicine is that of Abdominal Compartment Syndrome following surgery, in the ICU setting <sup>(5)</sup>. It has been documented in all anatomical areas where there are compartments; including the lower leg, forearm, feet, hands <sup>(2,3)</sup>.

Epidemiology figures from the US quote an incidence of between 2 and 12 percent in the context of the anterior compartment of the lower limb, with men being more affected than women <sup>(2)</sup>. There are no available data from New Zealand injury statistics to compare this to.

Urgent Care facilities see a high proportion of patients suffering acute limb injuries, ranging from sprains and contusions, to fractures. In our everyday practice we are therefore exposed to a patient population at higher risk of developing compartment syndrome. In fact, we actively look for the diagnosis in every “routine” plaster check. But is this a diagnosis that is easy to make?

## Case Description

This patient presented to an Urgent Care Clinic on a Sunday afternoon.

- History:** 38yr old man presents with an injury to his left lower leg.
- PMHx:** Normally fit and well, nil other PMHx, no regular meds, NKDA. UTD with ADT
- HOPC:** Slipped and slid down the front of a ladder yesterday, grazing his anterior left shin. No other injury. Was able to keep painting, even went to watch a game of rugby that night. Awoke this morning with pain in his left shin++, which worsened throughout the day. Now unable to weight-bear and complaining of cold foot.
- O/E:** Uncomfortable
- Afebrile
- Pulse 100/min, reg
- BP 120/70
- Left lower leg grossly swollen and bruised with abrasion to anterior shin, and tight anterior compartment. No surrounding erythema or warmth.
- Subjective reduced sensation to light touch in left foot.
- Foot feels warm with 1sec capillary refill, however ?? slightly reduced foot pulses, and pain ++ at anterior compartment on passive movt of foot.
- Xray:** NAD
- Impression:** Soft tissue injury to left lower leg with tight anterior compartment, symptoms of paraesthesia in foot, reduced pulses and pain on passive movt of foot.
- ?Compartment Syndrome
- Plan:** Ice pack to shin, leg elevated.
- Refer urgently to Orthopaedic services @ APH, ambulance transfer.
- NBM (last ate 12:30pm)
- 1g PR paracetamol given before transfer
- Outcome:** Seen by Ortho reg - no evolving compartment syndrome, discharged later that day with a diagnosis of soft tissue injury. Seen in Urgent Care clinic 3/7 later – improving.

## Case Discussion

This patient had several concerning features in the history and examination suggestive of a possible Compartment Syndrome (CS). Afterwards, I wondered if there are any clinical features that can reliably predict the diagnosis of acute CS. I was also interested in the acute management of the syndrome – fasciotomy is the definitive treatment <sup>(1-4,6,7)</sup>, but are there interim management modalities prior to fasciotomy that have been shown to improve outcomes? I have decided to focus on the issue of clinical diagnosis for the purpose of this discussion.

There is a large body of work in the literature on CS. This has been comprehensively documented, beginning with Volkmann's early work in the 1880's <sup>(1-3,6,7)</sup>, continuing with work on compartment pressure measurements using injection techniques <sup>(1-3)</sup>, and ongoing currently where more work has been done on the biochemistry of muscle ischaemia using ATP measurements <sup>(3)</sup>. Today there is a relatively accepted working model, of "increased pressure within an enclosed osteofascial space reduces the capillary blood perfusion below a level necessary for tissue viability" <sup>(3)</sup>. Two mechanisms have been proposed: increased volume within an enclosed space, and a decrease in the size of that space <sup>(2,3)</sup>. Increased volume in the setting of haemorrhage and oedema, and decrease in size via iatrogenic routes such as plaster casts, and MAST garments <sup>(1-3)</sup>. Muscle and nerve dysfunction is directly correlated with increasing compartment pressures, and ongoing time of exposure <sup>(3)</sup>. It has been shown that skeletal muscle may survive for up to 4hrs <sup>(3)</sup> without lasting damage, but 8hrs results in irreversible changes to both muscle and nerve tissue <sup>(3,4)</sup>. This leads to necrosis, scarring and eventually contracture with neuropathy <sup>(1-4)</sup>.

While the cause and development of CS is now widely accepted, it appears there is a lack of consensus as to the exact clinical definition of the condition. Ulmer <sup>(8)</sup> also identified this in his literature review, citing some authors who used clinical criteria to make a positive diagnosis, others measurement of compartment pressure, and some who used a combination. Kostler et al <sup>(1)</sup> also commented on this, stating "the critical level of the absolute intra-compartmental pressure remains yet undecided", quoting a range of levels from 30 to 50 mmHg.

Teaching has traditionally associated the diagnosis of CS with the "5Ps" of Pain, Pallor, Paralysis, Paraesthesias and Pulselessness <sup>(1-4)</sup>. Indeed, the ADHB RMO Clinical Handbook <sup>(7)</sup> still uses this guide, with their own addition of "Perishing cold" as a further sign of CS. However, most authors now maintain that these are all very late signs of CS, and fasciotomy should not be delayed until they are present <sup>(1-3,7)</sup>. Anecdotally, current practice within the Auckland region involves a clinical diagnosis using features such as pain out of proportion to the injury, tightness of the affected compartment, and pain on passive stretch of the compartment, with compartment pressure measurement if the diagnosis is in doubt (C.Chan, personal communication, 2005 March 21).

Clinicians at the Boston Children's Hospital conducted a retrospective review of 36 consecutive cases of CS <sup>(4)</sup>. Pain was the most common symptom reported, but less than 40% of patients with a positive diagnosis of CS had an association with more than 2 other "Ps". They concluded from this that "the diagnosis should not be excluded based on false assurances gained from the absence of these clinical findings". Interestingly, a small subset of the patient population were given narcotic or benzodiazepines during the course of their initial assessment. All patients were observed to have an increase in dosage and frequency requirements prior to their eventual diagnosis of CS. Also, this increase was found to precede any other clinical signs by an average of 7.3hrs.



Ulmer's<sup>(8)</sup> objective was "to assess whether published studies support basing the diagnosis of compartment syndrome of the lower leg on clinical findings". He found that the clinical findings "primarily associated" with a CS diagnosis were that of Pain, Paraesthesia, Pain with passive stretch, and Paresis, but there was no consensus on the "most important" associated sign. He found low sensitivity and positive predictive values of 13% and 19% for the diagnosis of CS using these clinical findings, but a high specificity and negative predictive value of 97% and 98% respectively. This suggests that the absence of these findings is of more use in excluding the diagnosis, than their presence is in establishing a diagnosis. This is in direct conflict with the paediatric study cited above, however a slightly different group of clinical signs were assessed, using a different patient population. Further analysis using likelihood ratios showed that the probability of compartment syndrome with one clinical finding was 25%, however this was increased to 93% when three clinical findings were present simultaneously, "...each additional positive clinical finding markedly increases the odds for compartment syndrome". However, the main conclusion from this study pointed to a lack of data from which to assess the predictive value of clinical features in the diagnosis of CS.

In summary, CS is an important problem, with high associated morbidity and mortality if the diagnosis is delayed. The cause and pathophysiology is now well understood, but there is no standardised clinical definition of CS. This is a fundamental issue – how can we confidently identify an entity if we cannot define it? Until this is addressed, there will continue to be debate regarding the diagnosis of CS, and the utility of tools such as clinical assessment and compartment pressure measurement. In paediatric populations increasing analgesic needs may serve as an early indicator as to the development of CS. In adults, when considering features of pain, paraesthesia, pain with passive stretch, and paresis, their absence may be of more value in excluding the diagnosis, and their presence may be of more use cumulatively.

Implications for my clinical practice are to continue maintaining a high index of suspicion and a low referral threshold, perhaps using Ulmer's amended list of Ps as a guide. I now specifically ask about pain relief requirements when I check a plaster.

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## SAMPLE EXTENDED CASE HISTORY

### Introduction

Abdominal pain is one of the most common presentations in the emergency department. It is estimated to comprise 5-10% of total visits<sup>1,2</sup>. In women of reproductive age, abdominal pain is a diagnostic challenge because of the broad differential diagnosis. It is necessary to not only consider normal surgical diagnosis but also gynaecological problems. There is the potential to miss conditions which can be life threatening (for example ectopic pregnancy) or threatening to future fertility<sup>1</sup> (for example ectopic pregnancy or tubal infections). Of adult ED patients presenting with abdominal pain 18% could be expected to need admission, 10% requiring urgent surgery. 12% could be expected to be due to female pelvic pain<sup>1</sup>.

To whittle down the possible differential diagnosis a thorough history and thorough unhurried examination are important<sup>1</sup>. This alone often presents difficulties in the pressured environment of the ED. In women the exclusion of pregnancy is also very important— with a negative pregnancy test, symptomatic ectopic pregnancy is very unlikely.

It has long been standard practice to do a pelvic examination in women presenting with lower abdominal pain<sup>1,2,3</sup>. The ideal conditions for a pelvic examination can be difficult to organise in an urgent care setting. Often I have felt that the examination once done has not added much to my original impression or management plan.

My patient's resistance to having this examination got me wondering about bimanual examination as a test. How useful is it? How reproducible are the findings? Is there a better alternative?

## Case Description

This patient presented to an Urgent Care Clinic on Monday lunchtime.

PC – 23 year old Maori woman presents with a tow hour history of left abdominal pain.

HxPC – Sudden onset of left lower abdominal pain while sitting at her desk working (bank clerk). Describes it as sharp and gradually worsening. Some nausea, no vomiting. Feels bloated. No fevers, no urinary symptoms, normal bowel movement earlier in morning. Normal period around 3 weeks earlier, periods generally regular and not particularly painful or heavy. No previous pregnancies. Sexually active with regular partner. On C.O.C. for contraception. Normal smear and swabs earlier in the year. Has taken panadeine 2 tablets one hour ago with no noticeable improvement.

PMHx – Normally fit and well. Appendicectomy in teens.

Meds – Combined oral contraceptive only.

No Allergies.

SHx – Smoker 8/day. Alcohol 3-6 drinks/week. Lives with partner. No children.

O/E – Slim young Maori woman in mild distress holding her left side. More comfortable upright, dislikes stretching out. Afebrile, p-100, BP 130/85. Abdomen – soft. Some guarding L iliac fossa, rebound, bowel sounds present.

U/A – Negative HCG, 1+leuks, 1+protein

Given Diclofenac 75mg IM.

Reviewed 1 hour later. Reports pain unchanged at 6/10. Re-examined tenderness as before. Discussion with patient re need for pelvic exam, patient not keen, embarrassed and sore. Eventually agreed to exam. Speculum exam – no blood, no discharge, cervix appears normal. Swabs taken. Bimanual – tenderness on left, no cervical motion tenderness.

Imp – Non specific findings. Most likely Gynaecological in origin e.g. ovarian cyst / tension / bleed into cyst.

Plan – Referred to Gyne registrar – Admitted overnight. USS normal, pain settled and discharged next day.

## Case Discussion:

This patient presented with lower abdominal pain. My experience and teaching made me think a pelvic examination was mandatory before referral to the hospital. My patient was not of a like mind and felt embarrassed and uncomfortable about the examination. She agreed to have the examination after my explanation of what I would do and why I felt it was important. She did comment afterwards that it was not as bad as she thought it would be. The findings on pelvic examination were nonspecific with only left sided tenderness and really had no effect on my differential diagnosis or management plan.

As the pelvic examination did not change my plan, I considered afterwards whether it was in fact necessary or useful. This led to my investigation.

In the Journal "Midwifery" Yonikkerem et al<sup>4</sup> reported on women's attitudes to gynaecological examination<sup>4</sup>. They found that 54% of women felt anxious about the possible outcome of the examination and 41.8% found it embarrassing having to undress. 25% were worried about cleanliness. 18% feared pain. They found that good explanation and empathy improved patient experiences. Given the patients' attitude to the examination I feel it is important we recommend it only when there is likelihood they will benefit from having it done<sup>3</sup>. So how good is it as a test and how can we recommend it as worthwhile to our patients?

If we look at pelvic examination as a test, it is sensible that we look at its cost, sensitivity and specificity and reproducibility<sup>3,5</sup>.

Firstly its cost. There is obviously no direct financial cost to this examination but there is a cost to the patient – embarrassment, fear and discomfort. A cost in time –to obtain informed consent, to provide privacy, to have the time to examine properly and sensitively. And a cost in staffing – increased consultation time and provision of a chaperone. In our chronically short staffed, busy unit these costs can be significant.

Next: Reliability. Close, Sachs & Dyne<sup>5</sup> reported on a study of 186 patients who consented to have a pelvic examination done and recorded by two examiners. The patients presented with pelvic and/or abdominal symptoms and had routine bimanual examination. The authors found that findings at pelvic examination were not reliable. Percentage of agreement between the two examiners ranged from 71-84% dropping to 17-33% where a clinically significant finding was reported<sup>5</sup>. Obesity, pain, anxiety and retroversion were limiting factors resulting in less useful examination. They concluded that in their ED situation reliability was poor. Possible explanations proposed were differences in training or differences in describing findings. They recommended that serial examination be used in teaching to improve skills. They found repeat examination well accepted in their study population and proposed it would be acceptable in a teaching situation. Whether this

would be true in our population I'm not sure. They also considered that "pelvic examinations may be a poor test". I felt their findings are relevant to our situation. Bimanual examination has been patchily taught through my education and I certainly don't feel confident in my findings on many occasions.

Brown et al <sup>7</sup> conducted a pilot study<sub>3</sub> of 183 ED patients. They acknowledged my concerns that performing a pelvic exam in a busy ED is often challenging due to the need for privacy and chaperones. They found that in 6% of cases the examination revealed an unexpected finding that altered the care of the patient. In fact they noted that "the claim that the pelvic exam is a reliable decision aid in Ed patients with abdominal pain or bleeding has been called a medical myth"<sup>7</sup>. Wisely they state that there are two ways to look at their findings. Firstly that it changed management in 6% of patients so therefore pelvic exam is important. Secondly that as it changed management in only 6% it shouldn't be inflicted upon every woman with pelvic symptoms. I think it is safe to say if you were a patient in the 6% you would be glad you suffered the indignity of the pelvic examination. The problem now is in determining which patients are likely to be in the subset who benefit from the examination.

So is it the lack of gynaecology experience that makes ED doctors unreliable? Padilla et al <sup>6</sup> reported on women examined in ideal conditions under general anaesthetic. The examiners included gynaecologists, Gynaecology residents and medical students who were blinded to the reason the women required surgery. The authors found that pelvic examination had a high specificity but low sensitivity. "Except for gynaecology residents examinations of the left adnexa, the ability of bimanual examination to detect adnexal masses was no better than chance alone." They concluded that pelvic examination is useful as long as examiners are aware of its limitations.

So, if not pelvic examination, then what? Padilla et al <sup>6</sup> support the use of ultrasound as a bedside test. This is obviously limited in our situation by lack of availability and training but is promising for the future.

So in conclusion what do I take from my investigations? Pelvic examination of women with pelvic pain or bleeding is important. It can be made more acceptable by adequate explanation, privacy and care. There are limitations to what I should expect to be able to determine from the examination. In particular if I am unable to feel adnexal pathology that is later found I will no longer view this as a failure. If a patient were particularly resistant to having the examination and I felt examination was unlikely to change my management plan – for example if I had already determined specialist review was required, I would respect this and not try to convince her otherwise. Until such a time as we have access to a better bedside test such as USS, I will continue to offer bimanual examination with a better understanding of its benefits and limitations.

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