022/3 Witness Statement Ref. No. NAME OF CHILD: RAYCHEL FERGUSON Name: Ragai Reda Makar Title: Mr. Present position and institution: Previous position and institution: Senior House Officer, Surgery, Altnagelvin Hospital [As at the time of the child's death] Membership of Advisory Panels and Committees: [Identify by date and title all of those since your Witness Statement of 1<sup>st</sup> November 2012] **Previous Statements, Depositions and Reports:** [Identify by date and title all those made in relation to the child's death since your 1<sup>st</sup> November 2012] **OFFICIAL USE:** List of previous statements, depositions and reports: Ref: Date: 012-045-216 05.02.03 Deposition at Inquest on Raychel Ferguson 012-014-116 16.01.02 Statement 022/113.12.11 Inquiry Witness Statement 022/201.11.12 Supplemental Inquiry Witness Statement

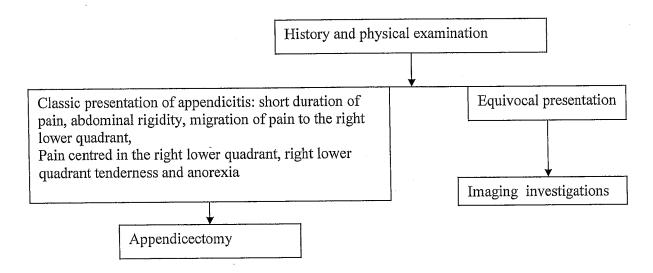
# Explanations concerning the questions raised:

## The time of appendicectomy and the duration of symptoms?

Raychel presented to A&E with peri-umblical pain of 4 hours (from 4pm to 8pm) duration which shifted to the Right iliac fossa.

"abdominal pain is the prime symptom of acute appendicitis classically the pain initially diffusely centred in the lower epigastrium or umbilical area, is moderately severe, and is steady- sometimes with intermittent cramping superimposed. After a period varying from 1 to 12 hours, but usually within 4 to 6 hours, the pain localizes in the right lower quadrant. " (Schwartz, 1994 and Schartz 2010).

Diagnosis of acute appendicitis is based mainly on history and clinical examination. Varies symptoms have been described as classically associate with appendicitis which is a valid approach for management planning. An algorithm described by Paulson et al 2003.



In children the physical examination findings of maximal tenderness in the right lower quadrant, the inability to walk or walking with a limp, and pain with percussion, coughing, and hopping were found to have the highest sensitivity for appendicitis (Colvin et al 2007).

"Though some patients with acute appendicitis have spontaneous subsidence of the acute process, there is no way of predicting in which patients this will occur. The only safe course of action in uncomplicated acute appendicitis is immediate appendicectomy" (Schwartz, 1994).

"The disease progress more rapidly than in adults- gangrene and rupture occur earlier in course of acute appendicitis in children. Rupture rate varies from 15% to 50% in reported series" (Schwartz 1994).

## Retrospective assissment of the symptoms in context of appendicular feacolith.

Frazer et al (2004) have studied 601 consecutive appendicectomy report. They have showen that all patients with appendicolith in non-inflamed appendix group had presented with acute abdominal pain mimicking acute appendicitis. They also noted that appendicolith was rarely found in incidental appendicectomy (meaning patients who had appendicectomy while getting an other abdominal surgery).

Nitecki et al (1990) when retrospectively reviewed 3397 patients records, have shown that appendiceal fecaliths and calculi appear to play a role in the pathogenesis of acute appendicitis and are associated with complicated appendicitis (perforation and abscess).

## The presence of 1+ of protein in urine

The presence of 1+ protein in urine is not unusual in the presence of acute appendicitis.

The value of urine analysis: "Several white or red blood cells can be present from ureteral or bladder irritation as a result of an inflamed appendix." (Schwartz, 1994).

Abnormal urine analysis in patients with acute appendicitis has been reported in 19% to 40% of patients (Puskar et al 1995, Kretchmar and McDonald 1963, Scot et al 1983)

The prevalence of isolated proteinuria detected by routine urinalysis (urine dipstick) in school age children was shown to be approximately 10%. Further investigation of these children did not show any evidence of underlying renal disease in the absence of blood and proteinuria. (Vehascari and Rapola 1982, Gattineni 2012).

Transient proteinuria is associated with stress and exercise is not suggestive of underlying renal disease. The proteinuria resolves with the resolution of the underlying predisposing condition (Gattineni 2012).

#### References

Schwartz IS. Appendix, Chapter 27 in Principles of Surgery, Sixth Ed, by McGraw-Hill 1994.

Schwartz IS. Appendix, Chapter 30 in Principles of Surgery, Sixth Ed, by McGraw-Hill 2010.

Paulson EK, Kalady MF, Pappas TN: Clinical practice. Suspected appendicitis. N Engl J Med 348:236, 2003. [PMID: 12529465]

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Frazer N, Gannon C, Stinger MD. Appendicular colic in a non-inflamed appendix fact or fiction?. European journal of Paediatric Surgery; 2004;14:21-24.

Nitecki S, Karmeli R, Sarr NG. Appendiceal calculi and fecaliths as indications for appendectomy. Surg Gynecol Obstet. 1990 Sep;171(3):185-8.

Kretchmar LH and McDonald DF: The urine sediment in acute appendicitis. Arch Surg 87: 209-211

Scott JH, Amin M, and Harty JI: Abnormal urinanalysis in appendicitis. J Urology 129: 1015-1983

Purskar D, Vuckovic I, Begalov G, Banek T, Fridrih S and Pasini J. Urinalysis, Ultrasound analysis and renal Dynamic Scintigraphy in Acute Appendicitis. Urology; 1995:45; 108-112

V. M. Vehaskari and J. Rapola, "Isolated proteinuria: analysis of a school-age population," Journal of Pediatrics, vol. 101, no. 5, pp. 661–668, 1982.

Gattineni J. Highlivhts for the management of a child with proteinuria and hematuria. International Journal of Pediatrics; 2012; ID 768142, 7 pages doi:10.1155/2012/768142

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# THIS STATEMENT IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF

Signed:

Dated: