



The Fitz Hugh-Curtis Syndrome and Hydrosalpinx: Analysis of Findings in Gynecologic Laparoscopy Procedure of Infertile Women

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Abstract

Method: the study was conducted to analyze the correlation between Fitz Hugh-Curtis syndrome (FHCS) with the occurrence of hydrosalpinx, and the risk for hydrosalpinx occurrence due to FHCS. This observational retrospective study was conducted by reviewing the medical records of 315 infertile women who underwent gynecologic laparoscopy procedure from 2011 to 2016. FHCS was characterized by the presence of perihepatic adhesion between Glisson's capsule and anterior peritoneum, forming "violin string" appearance, and categorized as a mild, moderate, and severe form. The comparison of the degree of FHCS and hydrosalpinx occurrence was analyzed using χ^2 test. The odds ratio was calculated to analyze the risk for hydrosalpinx occurrence in the presence of FHCS. The p-value < 0.05 was considered significant. Of 315 subjects, FHCS was found in 108 subjects (34.3%), while hydrosalpinx was found in 107 subjects (34%). Sixty-eight subjects (63%) have a severe degree of FHCS. In subjects with FHCS, 64.5% had hydrosalpinx. There was a significant difference in the perihepatic adhesion degree and the occurrence of hydrosalpinx ($\chi^2 = 7.55$; $p = 0.02$). There was a significant difference in hydrosalpinx occurrence between FHCS-positive and -negative group ($\chi^2 = 65.60$, $p < 0.05$). The risk of hydrosalpinx occurrence was higher in the presence of FHCS compared with those without FHCS (OR 7.87; 95% CI 4.64 - 13.33, $p < 0.05$). **Conclusion:** the risk for hydrosalpinx was elevated in FHCS.

Subject Areas

Gynecology & Obstetrics

Keywords

Fitz Hugh-Curtis Syndrome, Hydrosalpinx, Female Infertility, Tubal Pathology

1. Introduction

Fallopian tube pathology is an important aspect, causing 25% - 35% cases of female infertility [1]. The most common etiology is the pelvic inflammatory disease (PID), which may lead to the occurrence of Fitz Hugh-Curtis syndrome (FHCS) [2]. FHCS is characterized by perihepatic adhesion formation between the Glisson's capsule and anterior parietal peritoneum without liver parenchymal involvement. It was believed that FHCS might occur as an ascending process from PID and correlated with some microorganism, *i.e.*, *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, and *Mycobacterium tuberculosis*. In the acute phase, FHCS might be manifested as right upper abdominal pain with fever, while in the chronic phase it may be symptomless [3]. The prevalence of FHCS reported from the various study was contradicting. Some studies reported that FHCS was a rare condition [4] [5] [6] [7], while in other studies the prevalence was reported from 14.6% to 16.6% [8] [9].

The most severe form of tubal damage was hydrosalpinx, the distal tubal occlusion with fluid accumulation, leading to anatomic distortion and tubal function abnormality [10] [11] [12]. It might prevent fertilization of gametes, and also may affect endometrial receptivity in *in-vitro* fertilization (IVF) program due to embryotoxic fluid contamination [13] [14] [15], flushing effect in the uterine cavity, bathing of the endometrial cavity with fluid, and the presence of thin layer of fluid that may impede embryo implantation [12]. The live birth rate, therefore, is compromised to 50% in the presence of hydrosalpinx [2]. Hence, several guidelines suggest hydrosalpinx should be managed before IVF program was commenced [2] [16].

With regards to the adverse effect of hydrosalpinx, the analysis of the impact of FHCS to hydrosalpinx formation becomes important especially in the high PID incidence region. However, the study on this topic is scarce. Therefore, we conducted the study to assess the risk of occurrence of hydrosalpinx in the presence of FHCS.

2. Material and Methods

This retrospective study was performed by reviewing the records of in female infertility patients in Assisted Reproductive Technology Unit, Hasan Sadikin Hospital Bandung, Indonesia during the 2011-2016 period. Subjects included in this study were 20 - 40 years old infertile female who underwent the laparoscopic procedure as a part of the management protocols. Subjects with previous abdominal surgery were excluded from this study. This study was approved by the Ethical Committee for Health Research, Hasan Sadikin Hospital Bandung. All patients have given their general consent before receiving management from the