

# Laparoscopic Hemi-Hysterectomy for Complex Obstructive Mullerian Anomalies in Paediatric & Adolescent Gynaecology: Experience of the Queensland Paediatric and Adolescent Gynaecology Service between 2002-2021

Julian Vitali BSc, MD <sup>1,2</sup>, David Baartz MBBS, FRANZCOG <sup>1,2</sup>, Alicia Veasey BN, MBBS, MPH, MHM <sup>1,2,3</sup>, Rebecca Kimble, MBBS (Hons), FRANZCOG, GAICD, MHLM <sup>1,2,3</sup>

1. Royal Brisbane & Women's Hospital. 2. Faculty of Medicine, University of Queensland 3. Queensland Children's Hospital

## Background

Complex obstructive Mullerian anomalies of the uterus are a rare congenital disorder with severe gynaecological complications. This study outlines findings from nearly two decades of retrospective data on the laparoscopic treatment of these Mullerian anomalies with a multidisciplinary team approach, including - advanced laparoscopic surgeons, paediatric gynaecologists and radiologists.

## Design

Retrospective review of all patients who underwent a laparoscopic hemi-hysterectomy within the Queensland Paediatric and Adolescent Gynaecology Service from 2002 to 2021, identified through the PAG database. *Anatomical classification based on ESHRE 2014.*

## Results

19 patients, aged 13 to 31 years with an average age of diagnosis of 19 years were retrospectively reviewed.

Anatomical Presentations included:

- 8 complete bicorporeal functional uteri with unilateral cervical aplasia
- 10 hemi-uteri with a non-communicating functional rudimentary cavity
- 1 hypo-plastic uterus with a functional rudimentary cavity and no cervix
- 11 renal agenesis on the obstructed/ abnormal side

No procedure required a conversion to laparotomy. *Median* operative time of 2 hours and 37 minutes was achieved, with average post-operative *length of stay* of 2 days. No intraoperative or post-operative complications were recorded.

Five known patients have had seven pregnancies since operative intervention.

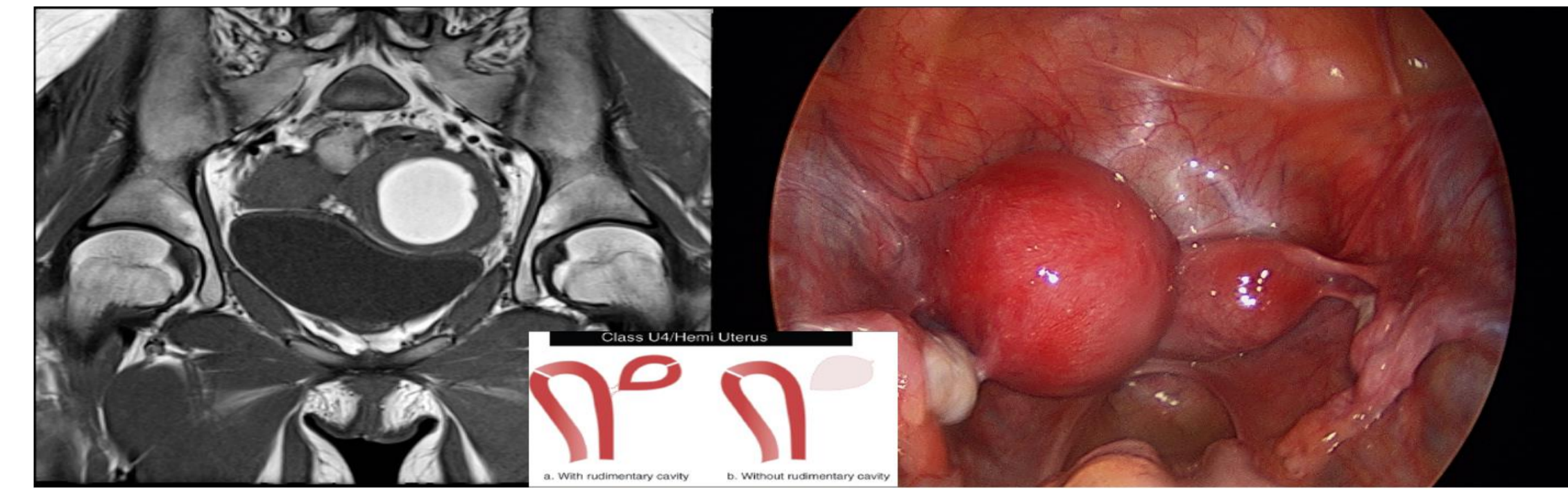


Figure 1: Rudimentary Horn

Diagnosis	Age at Menarche	Age at Surgery	Surgery Duration (min)	Complications	Pregnancies
Right Triad. Uterine Didephs, hypoplastic right cervix with recurrent haematometra, right hemivagina with haematocolpos.	11	15	238	Nil	1
Complete bicorporeal uterus with right cervical aplasia	11	14	147	Nil	-
Left Triad. Uterus Didephs with hypoplastic left cervix.	13	26	240	Nil	2
Left unicornuate uterus, with functional non-communicating right hemi-uterus	12	20	157	Nil	-
Left unicornuate uterus, with functional non-communicating right hemi-uterus. Haematometra	13	15	134	Nil	-
Left unicornuate uterus, with functional non-communicating right hemi-uterus	16	21	204	Nil	2
Left unicornuate uterus with non-communicating right hemi-uterus, with rudimentary cavity containing haematometra.	14	15	167	Nil	-
Right unicornuate uterus, with functioning non-communicating left hemi-uterus. Haematometra	13	15	141	Nil	1
MRKH variant. Left functional hemi-uteri, right hypoplastic non functional hemiuteri. Cervical aplasia and absent upper vagina.	-	25	131	Nil	-
Right unicornuate uterus, with functioning non-communicating left hemi-uterus	14	15	131	Nil	-
Complete bicorporeal uterus with right cervical aplasia	11	15	205	Nil	-
Left unicornuate uterus, with functional non-communicating right hemi-uterus	14	22	210	Nil	1
Left unicornuate uterus, with functional non-communicating right hemi-uterus	13	24	194	Nil	-
Left unicornuate uterus, with functional non-communicating right hemi-uterus	-	32	117	Nil	-
Right unicornuate uterus, with functional non-communicating Left hemi-uterus	13	27	121	Nil	-
Uterus Didephs with RIGHT Cervical aplasia	-	13	180	Nil	-
Bilateral functional hemi-uteri with cervical and vagina atresia	-	18	159	Nil	-
Right unicornuate uterus with non-communicating, functional rudimentary horn	-	29	141	Nil	-
Right unicornuate uterus with left rudimentary horn.	15	24	139	Nil	-
Mean/ Mean/ Median/ Total/ Total	13 Years	20 Years	157 Minutes	Nil	7

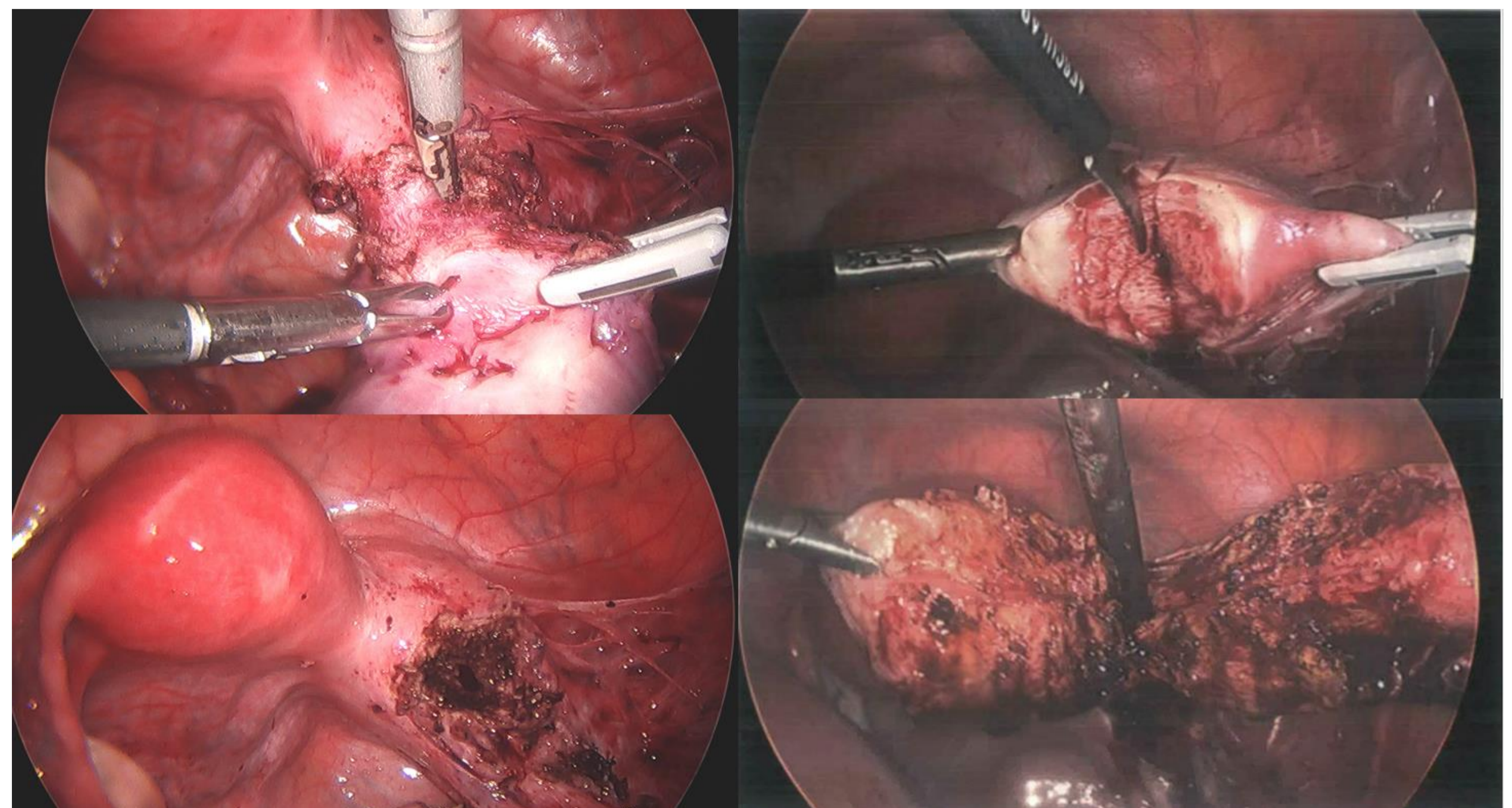


Figure 2: uterus didelphys with unilateral cervical and vaginal partial agenesis. Endocervix present ectocervix absent.

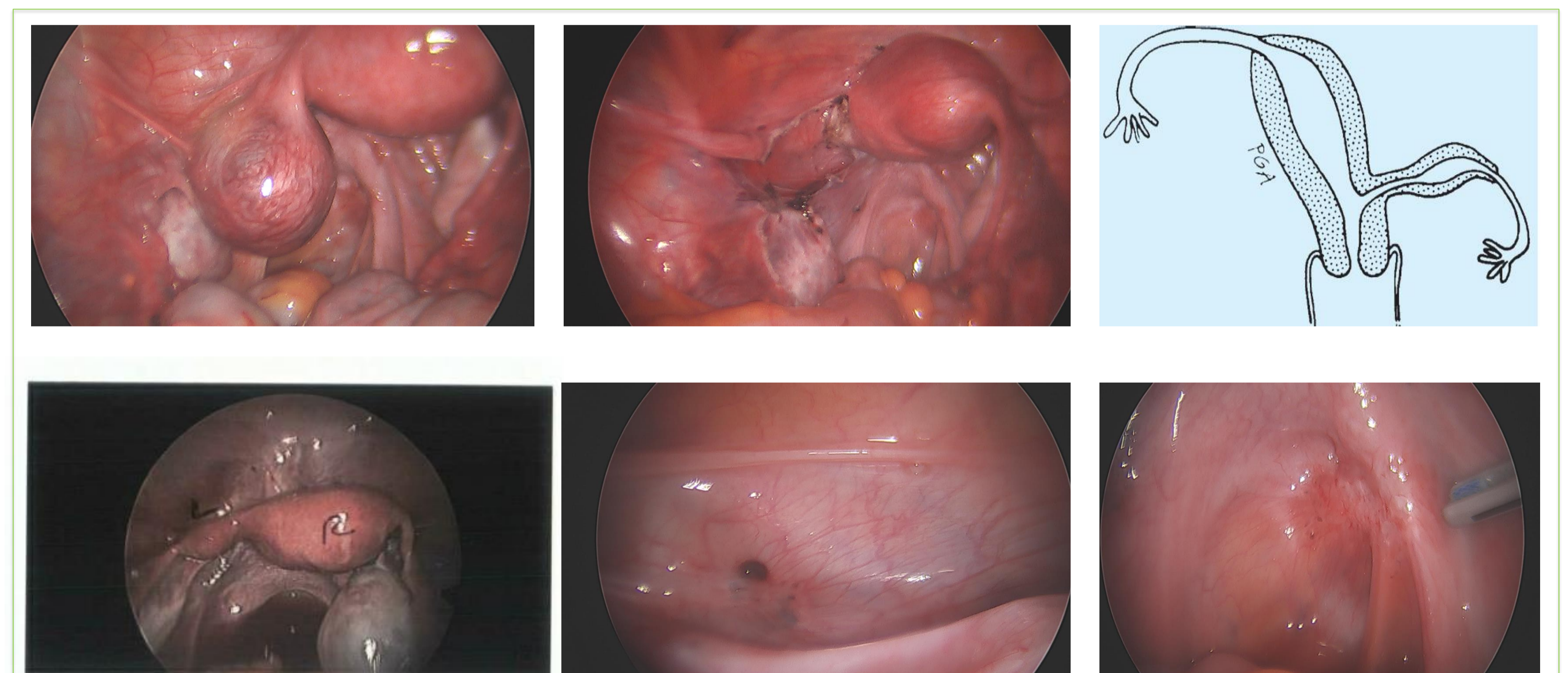


Figure 3: Right Uni-cornuate uterus; Communicating Left uterine horn with functional endometrium; 8 weeks pregnancy in left horn; Laparoscopic Left hemi-hysterectomy 12 May 2022 @ age 23 yrs; Diagnosed at age 15 yrs -imaged for HMB-but not counselled properly and horn not removed- note bottom left photo from initial diagnostic laparoscopy; Risk of rupture -Ectopic uterine horn pregnancy; Retrograde menstruation and endometriosis since menarche.

## Conclusion

Care for complex obstructive Mullerian anomalies in the paediatric and adolescent population can be safely managed and optimised with laparoscopic hemi-hysterectomy. A multi-disciplinary approach with paediatric gynaecologists, advanced laparoscopic surgeons, and radiologists results in effective treatment, short length of stay, and no documented adverse outcomes in subsequent pregnancy.