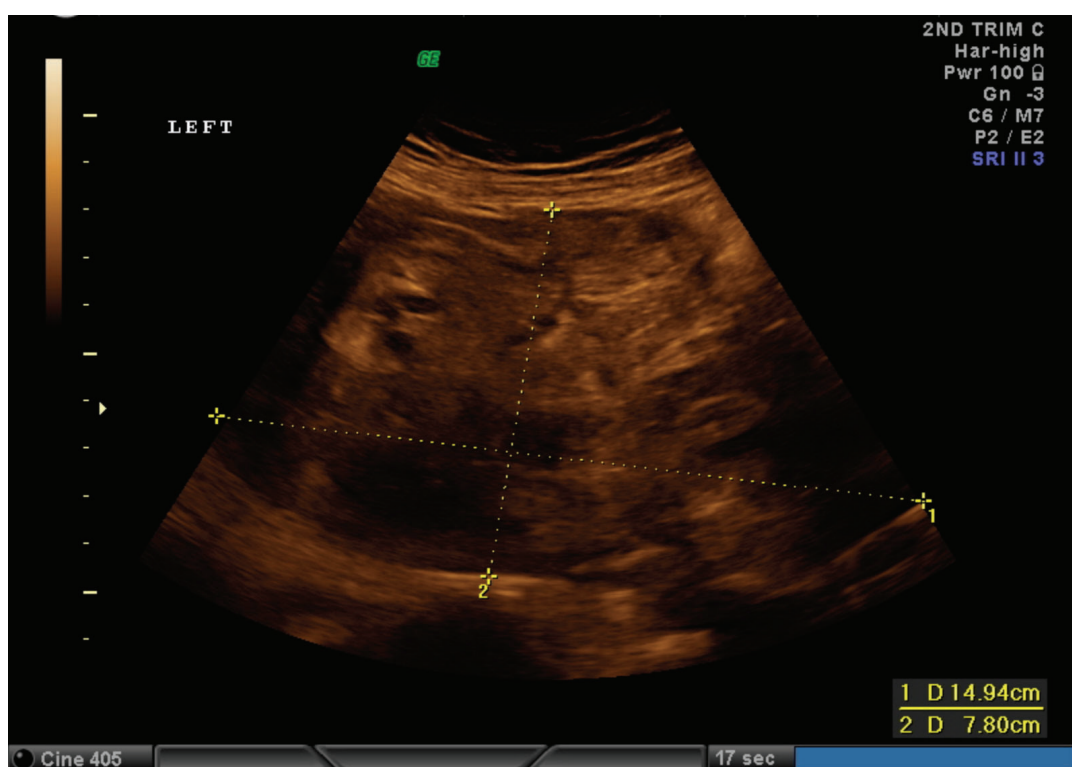


# Spontaneous hemoperitoneum – a matter of life and death

## Abstract

Spontaneous hemoperitoneum in pregnancy (SHiP) is a rare but potential catastrophic complication with high maternal and fetal mortality. The main cause of morbidity and mortality is delayed diagnosis and treatment. In this paper we will document the findings of an interesting case managed in our unit. We also discuss the etiology, diagnosis and management of this condition with high potential to lead to medico-legal cases.

*Keywords:* ectopic decidualisation, pregnancy complications, spontaneous hemoperitoneum.



**Figure 1:** Heterogeneous mass extending from the lower pole of the left kidney to the bladder.

## Case study

Our patient (31-year-old G2 P1) presented at 24+5 weeks gestation with a rapidly falling haemoglobin requiring transfusion. Imaging reports suggested a left renal mass. Ultrasound examination demonstrated fetal biometry consistent with dates and normal morphology. The cervix was long and closed, and the placenta well clear of the internal os. At the lower pole of the left kidney, a 14.9 x 7.8 x 8.2 cm heterogeneous mass was present which extended to the bladder (Figure 1). There was no internal vascularity, although the anteromedial margin was highly vascular (Figure 2). The left inferior aspect of the mass appeared to be intravesical (Figure 3). The patient became hemodynamically unstable

and a decision was made to do an explorative laparotomy. The mass was excised and the patient stabilised after surgery. She unfortunately went into spontaneous labour with a subsequent neonatal death. Histology of the tissue revealed decidualised endometriosis. Tomasz, *et al.* have described a similar case where a young pregnant woman presented with painful micturition.<sup>1</sup>

## Discussion

SHiP has been a known entity for the last century with two reviews, the first was published in 1950, and it included 75 cases with maternal mortality rate of almost 50%.<sup>2</sup> A more recent review (2009) looked at cases over the last 20 years with no maternal deaths reported but fetal mortality still high at 31%.<sup>3</sup>

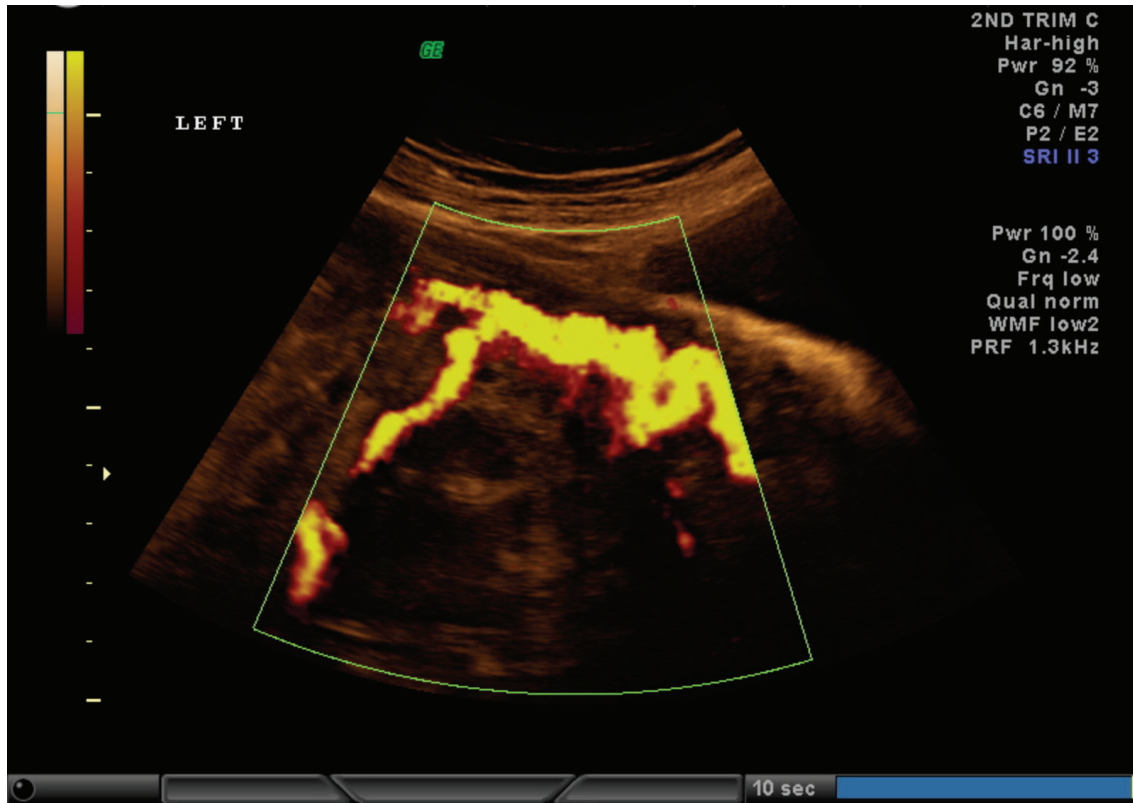
**Debra Paoletti<sup>1</sup>**  
AMS, MAppSci

**Meiri Robertson<sup>1,2</sup>**  
MB, ChB, BSc MedSc Hon

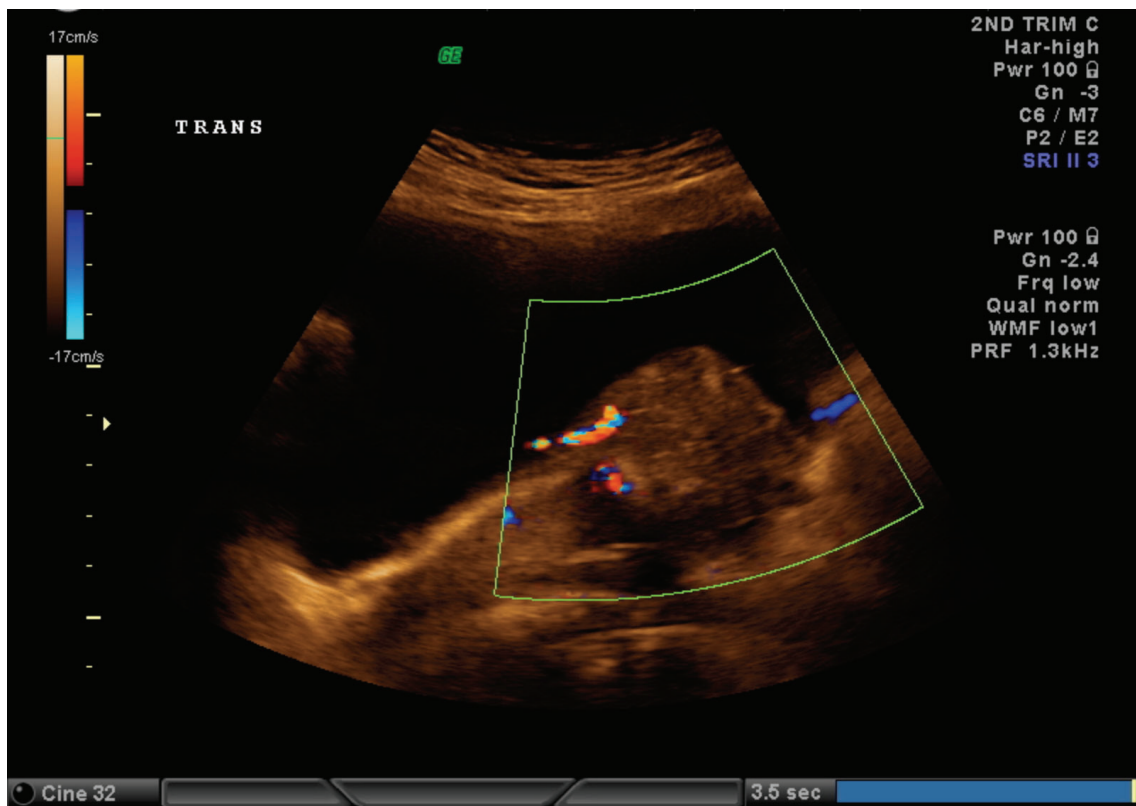
<sup>1</sup>Fetal Medicine Unit  
Division of Women  
Youth and Children  
Canberra Hospital  
Canberra  
Australian Capital Territory  
Australia

<sup>2</sup>Department of Obstetrics  
and Gynaecology  
Australian National  
University Medical School  
Acton  
Australian Capital Territory  
Australia

Correspondence to email  
debra.paoletti@act.gov.au



**Figure 2:** Peripheral vascular pattern of the mass.



**Figure 3:** Intravesical extension of the mass.

In this review the vast majority of patients were nulliparous (72%). The most common presenting symptom was acute or subacute onset of abdominal pain followed by hypovolemic shock and fetal distress. Ultrasound failed to diagnose intraperitoneal bleeding in all cases, similar to our own experience.

Laparotomy remained the gold standard for diagnosis with free fluid volumes of 500–4000 mL reported.

Our case and the reviewed cases highlight endometriosis as a significant risk factor for SHiP. Interestingly almost half of the cases associated with endometriosis did not have a prior

**Table 1:** Obstetric and non-obstetric causes of SHiP.

<b>Obstetric causes</b>	Uterine congenital abnormality (rupture of a rudimentary horn) <sup>5</sup>
	Abnormal placentation: Placenta percreta <sup>6</sup>
	Vascular: Rupture of utero-ovarian vessels <sup>7</sup>
	Pre-eclampsia and HELLP syndrome: hepatic rupture <sup>8</sup>
<b>Non-obstetric causes</b>	Decidualised endometriosis/endometrioma
	Fibroid <sup>9</sup>
	Vascular: rupture of maternal abdominal vessels <sup>10</sup>
	Trauma(including domestic violence) <sup>11,12</sup>

diagnosis; again our cases followed this trend. A history of assisted conception should therefore increase the awareness of this potentially devastating complication.

### Etiology

The main etiology for SHiP in the *first trimester* is ectopic pregnancy in all its forms. The rarer forms of ectopic pregnancy (lower segment scar, cornual and interstitial) can be more difficult to recognise and therefore delay diagnosis. There has also been a report of a spontaneous uterine rupture.<sup>4</sup>

Table 1 summarises the cause of SHiP in the *second and third trimesters*. A potential pitfall is most reported cases of trauma had a significant interval between the event and presentation (up to 8 weeks).

### Management

The early recognition of the deteriorating patient is essential, as is a well-informed team, supply of adequate blood products, specialist radiology cover for possible embolisation and appropriate surgery. Most reports consider a midline laparotomy as the most appropriate option to allow for management of non-obstetric causes. There should also be awareness to take an appropriate biopsy to confirm the presence of endometriosis to allow for definitive treatment at a later stage. Last but not least, traumatic vascular rupture as a result of domestic violence has also been reported. Careful histories and appropriate follow-up must form part of the work-up of these vulnerable patients.

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