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The degree of cervical remodelling predicts surgical morbidity in high-risk placenta accreta spectrum (Reply to Letter-to-the-Editor)

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1 **The degree of cervical remodelling predicts surgical morbidity in high-risk placenta
2 accreta spectrum (Reply to Letter-to-the-Editor)**

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21 We thank di Pasquo and Ghi for their interest in our article and giving the us the
22 opportunity to discuss this very important sonographic marker, depicting cervical
23 remodelling. [1,2] This sign first described by Hasegawa et al in 2009, as a sponge like
24 appearance of the cervix has inspired our research in exploring the clinical utility of this
25 sonographic marker in patients at risk for placenta accreta spectrum disorders. [3-5] We
26 identified several key concepts related to this marker. First, the vascular transformation
27 of the cervix is not always associated with placenta accreta spectrum, as patients with
28 placenta previa also demonstrates these cervical vascular changes. Secondly, the
29 degree of intracervical hypervascularity could be classified under three grades; Grade 1:
30 Vascularity less than 50% of the cervical length, Grade 2: More than 50% of the cervical
31 length but with visualisation of the clear zone between the placenta and internal
32 cervical ostium (**figure 1**), Grade 3: Hypervascularity more than 50% the length of the
33 cervix but with the absence of the retroplacental clear zone.
34 Among all the grades, Grade 3 is most strongly associated with severe outcomes,
35 particularly sudden and massive vaginal hemorrhage during surgery, and should be
36 regarded by obstetricians as a “danger sign,” given the difficulty in achieving
37 hemostasis due to its proximity to the uterine blood supply. [5–7] Hence, when Grade 3
38 intracervical hypervascularity is identified on preoperative ultrasound, we advocate for
39 advanced surgical preparation like aortic control and massive transfusion protocol.
40 During transvaginal ultrasound, abnormal lacunae within the placenta can occur near
41 the cervix and are typically accompanied hypervascularity within the cervix.
42 Owing to these phenomena, particularly in Grade 3, it is essential to clearly distinguish
43 the abnormal lacunae or vascular lakes within the placenta from those present in the
44 cervical tissue (**figure 2**). This consideration informed our choice of the term

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45 *intracervical hypervascularity*, which was selected to emphasize this distinction and to
46 intuitively reflect the proposed pathophysiological basis and enhance clarity.
47 Finally, we would like to reiterate our research findings that amongst high-risk PAS
48 cases, the combination of intracervical hypervascularity >50% with distorted urinary
49 bladder wall or parametrial hypervascularity on ultrasound predicts the need for
50 hysterectomy even amongst those with the intention of a uterine sparing surgery[1].

51
52
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55 Intracervical Lakes: Different Terms for the Same Sonographic Marker (Letter-to-the-
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80

81 **Figure legend**

82

83 Figure 1. Transvaginal ultrasound depicting Grade 2 intracervical hypervascularity. The
84 cervical hypervascularity (*) extends beyond 50% of the cervical length (dashed line)
85 but with the preservation of the 'clear zone' between the placenta and cervix (white
86 arrow).

87

88 Figure 2. Transvaginal ultrasound depicting Grade 3 intracervical hypervascularity. The
89 cervical hypervascularity (*) extends beyond 50% of the cervical length (dashed line)

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90 with 'loss of clear zone' between the placenta and cervix (white arrow). Kindly observe

91 that the placenta encroaching the anterior wall of the cervix.

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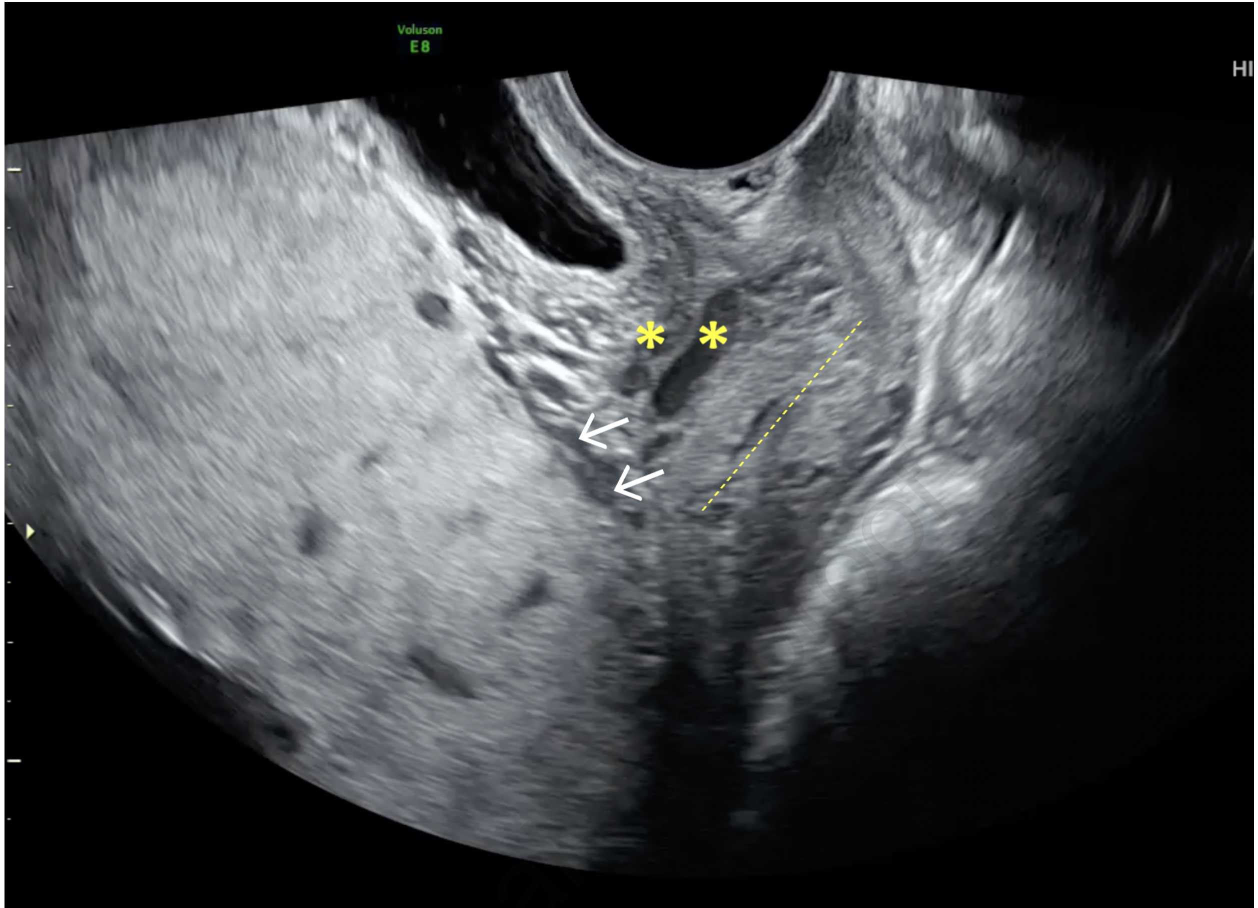
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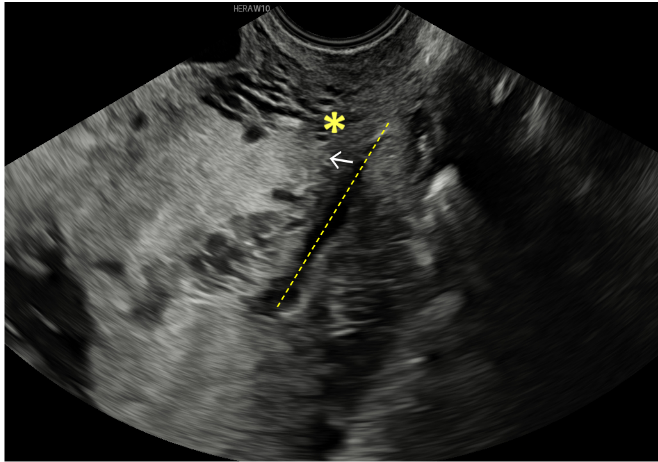

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