

# Opinion

## Menstruation : A Sign or Symptom of Physiology or Failed Physiology? – A Hypothesis

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Chettinad Health City Medical Journal 2014; 3(3): 94

Menstruation is of unknown evolutionary significance<sup>1</sup>. It is not clear why women are one of the very few species that menstruate<sup>1,2</sup>. In fact, menstruation may even be harmful to women's health by causing blood loss which may in turn lead to anaemia and this is associated with morbidity and mortality<sup>3,4</sup>. Menstruation remains a gynecological or reproductive endocrinological enigma.

Menstruation is widely believed to be a physiological function of all reproductive age women<sup>5</sup>. However, in recent times, we have an increasing concern about this assumption. I would like to propose a hypothesis that menstruation is a sign or symptom of failed function.

Menstruation occurs due to the shedding of the secretory endometrium after ovulation, when pregnancy fails to occur<sup>5,6</sup>. It may also occur after shedding of proliferative endometrium when ovulation fails to occur i.e patient has irregular menstruation, indicating failed ovulation<sup>7</sup>.

### It is observed that menstruation only occurs when:-

- 1) Ovulation occurs but fertilization and implantation does not occur, indicating that the physiological purpose of ovulation has failed – leading to menstruation<sup>5,6</sup>.
- 2) Menstruation occurs when there is anovulation – leading to failure of oocyte release, uncontrolled growth of the proliferative endometrium and eventual irregular shedding of the unsupported endometrium<sup>7</sup>.

Menstruation is one of the proximate causes of endometriosis. The body's defense mechanism may be able to tolerate few episodes of retrograde menstruation. Relentless menstruation as occurs in most women until pregnancy may predispose a genetically prone and immunologically susceptible woman to endometriosis<sup>8,9</sup>.

Endometriosis requires estrogen action and a functioning endometrium and menstruation<sup>10</sup>. Endometriosis is rare in pre menarchal years and post menopausal years where menstruation does not exist and the ovarian function is waning. Patients with Turner's syndrome and dysgenetic gonads do not normally develop endometriosis<sup>11</sup>. It is also very uncommon in patients with Mullerian agenesis<sup>12</sup>. Patients with mullerian agenesis, though they have fully functional ovaries, do not menstruate and hence do not develop endometriosis<sup>11,12</sup>. Therefore, it can be reasonably concluded that endometriosis is caused by menstruation and a functioning ovary; the absence of either or both is unlikely to cause endometriosis. It clearly indicates that persistent menstruation in an estrogenic woman who is immunologically susceptible and genetically prone leads to endometriosis.

Therefore, I would like to propose that menstruation is a sign of failed physiology or function. This acceptance is not just for semantic purposes but also may help us understand many of the menstruation related pathologies in humans like endometriosis.

### Acknowledgement

I thank Dr. Siddharth, Fellow in Clinical Andrology for helping me in researching the references and structuring the article. I also thank the peer reviewers for their valuable feedback and constructive criticism which has helped improve the article.

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