

# Futcher Lines: A Case Report in Pregnancy and Literature Review

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## Practice Points

- Pigmentary demarcation lines are common, especially in individuals with darker skin types.
- Type B pigmentary demarcation lines (Futcher lines) on the posterior lower extremities frequently are associated with pregnancy and generally resolve spontaneously after delivery.

*Pigmentary demarcation lines are common, especially in individuals with darker skin types. Type B pigmentary demarcation lines (Futcher lines) involve the posterior lower extremities and can be associated with pregnancy, often with spontaneous resolution after delivery. The pathogenesis of pigmentary demarcation lines remains unknown; however, neurogenic inflammation and/or mosaicism are thought to play a role in their development. We report a case of type B pigmentary demarcation lines in pregnancy and provide a review of the literature.*

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## Case Report

A 30-year-old Hispanic woman presented to our clinic for evaluation of asymptomatic lightening of the posterior legs of 3 months' duration that had gradually become more noticeable over time. The patient was 8 months pregnant at presentation. Her current medication included prenatal vitamins. She reported no other symptoms, and her medical history was otherwise unremarkable. She indicated that she had not seen similar lesions in herself or family members. A complete skin examination revealed curvilinear lines of pigmentary demarcation on the posterior thighs extending bilaterally from the buttocks to the posterior ankles (Figure).

Based on the patient's medical history and physical examination, a diagnosis of type B Futcher lines (Voigt lines) associated with pregnancy was made.

## Comment

Pigmentary demarcation lines, also known as Futcher or Voigt lines, present as an abrupt transition between areas of light and dark pigmentation, most commonly on the trunk and lower extremities. Six variants of pigmentary demarcation lines (types A–F) have been described (Table).<sup>1-4</sup> Overall, type A and type B appear to be the most common, with type C being the most common variant among men. Pigmentary demarcation lines are most commonly reported in Japanese and black patients with a female gender predilection.<sup>2</sup> In a study of 380 patients, James et al<sup>2</sup> found that pigmentary demarcation lines typically occur during childhood. The investigators also found that up to 79% of black women and 75% of black men had at least 1 pigmentary demarcation line compared to only 15% of white women.<sup>2</sup>

The pathogenesis of type B pigmentary demarcation lines is largely unknown. Some authors believe that these lesions are associated with the distribution of the cutaneous peripheral nerves and that the pigmentary differences result from neurogenic inflammation.<sup>5</sup> Ozawa et al<sup>6</sup> postulated that the compression of the peripheral nerves at S1 and S2 by an enlarging uterus in pregnancy results in the pigmentary abnormality. Other authors have hypothesized that mosaicism causes the pigmentary abnormality.<sup>7</sup> To our knowledge, no consensus has been reached. In general, pigmentary demarcation lines do not follow the lines of Blaschko or dermatomes. Type A and type B pigmentary demarcation lines correspond

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Type B pigmentary demarcation lines (Futcher lines) on the posterior lower extremities.

### Patterns of Pigmentary Demarcation Lines

Pattern	Sites Involved
Type A	Lateral aspect of the upper anterior portion of the arms; across the pectoral area
Type B	Posterior medial portion of the lower extremities
Type C	Vertical hypopigmented line in the presternal and parasternal areas
Type D	Posteromedial area of the spine
Type E	Bilateral aspect of the chest from the mid third of the clavicle to periareolar skin
Type F	Straight or curved line on the face

with Voigt lines, which are defined by the distribution of the peripheral nerves. Type B pigmentary demarcation lines, as in our patient, are more commonly associated with pregnancy; however, there are reports of type B pigmentary demarcation lines presenting in amenorrheic women,<sup>8</sup> which raises the issue of a hormonal component to this variant.

Type B pigmentary demarcation lines in pregnancy generally resolve spontaneously after delivery. Nakama et al<sup>9</sup> reviewed 19 cases of pregnancy-associated type B pigmentary demarcation lines that all resolved within a year of delivery. However, exceptions also have been reported. Ruiz-Villaverde et al<sup>10</sup> described a case in which pigmentary demarcation lines remained unchanged at 9 months postpartum. Unfortunately, our patient was lost to follow-up, and we were unable to determine if her pigmentary demarcation lines resolved.

### Conclusion

Pigmentary changes are seen in approximately 85% of pregnant women, with pigmentary demarcation lines being one of the more rare variants.<sup>10</sup> It is important for dermatologists to recognize and be familiar with this condition to reassure and counsel patients on their benign and generally self-limited nature.

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