

## Case for diagnosis

### Caso para diagnóstico

Fernanda Homem de Mello de Souza Klein<sup>1</sup>  
André Homem de Mello de Souza<sup>3</sup>

Renata Homem de Mello de Souza Alves<sup>2</sup>

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#### CASE REPORT

A 30 year-old Brazilian woman of skin phototype IV and pregnant for 35 weeks sought medical care for presenting hyperchromic lines on both legs for 5 weeks. Hyperchromia in the axillae and groin, which had appeared earlier in the pregnancy, were concurrent complaints. There were no associated symptoms. She had a history of gestational diabetes, which was been treated with NPH insulin since the 26<sup>th</sup> week of pregnancy and was under control. It was her second pregnancy, and she denied similar alter-

tations in the previous one. Hormonal disorders had been previously discarded by an endocrinologist. Physical examination revealed demarcation lines from the perineum to the posteromedial portion of the thighs extending to the ankles through the popliteal fossae, bilaterally and symmetrically, in the interface between a hyperchromic lateral portion and a lighter medial portion (Figures 1 and 2). Hyperchromic axillae and prominent linea alba were also seen.



**FIGURE 1:** Lateral aspect of the legs showing hyperchromia with linear, symmetrical demarcation to lighter medial area



**FIGURE 2:** Closer look of the demarcation line between hyperchromic and hypochromic areas on the posterior aspect of both legs

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<sup>1</sup> Dermatologist – Specialization in Cosmetic and Dermatologic Surgery – Clinics Hospital – Federal University of Parana (Hospital de Clínicas – Universidade Federal do Paraná, HC-UFPR) – Curitiba (PR), Brazil.

<sup>2</sup> Endocrinologist – Curitiba's Diabetes Center – Hospital Nossa Senhora das Graças (HNSG) – Curitiba (PR), Brazil.

<sup>3</sup> Physician – Residency in Internal Medicine at Hospital Municipal São José (HMSJ) – Joinville (SC), Brazil.

## DISCUSSION

Pigmentary demarcation lines (PDL), also known as Fitcher's Lines or Voigt's Lines, are physiological lines which correspond to abrupt transitions between deeply pigmented surfaces and lighter surfaces. So far, eight different types of PDL have been described (A - H).<sup>1</sup> Type B PDL occurs as a well demarcated line in the posterior aspect of the legs extending from the perineum to the ankles. Its distribution is bilateral and symmetrical and separates the more deeply pigmented skin of the outer surfaces from the lighter inner surfaces. There is smooth lightening of the hyperchromia as it reaches the anterior aspect of the legs. Fourteen percent of black women have type B PDLs during pregnancy.<sup>2</sup> In male black individuals, type B lines have already been observed; however, in white individuals, they are present only in women.<sup>3</sup>

The overlapping of these lines with Voigt's lines, which define the distribution of peripheral nerves, has led some authors to believe that the cause of this pattern is a result of the neurogenic inflammation produced in the late stage of pregnancy. Some cases were accompanied or preceded by an overlapped erythematous component, and the fact that the erythema and pigmentation disappeared soon after delivery supports this

hypothesis.<sup>3</sup> Compression of peripheral nerves in the space between S1 and S2 by the enlarged uterus and the influence of sex hormones have also been proposed as causative mechanisms of these lines; however, the pathogenesis is unknown.<sup>3,4</sup> Normal to low hormonal levels have been reported. Increased hormonal levels and maintenance of hyperpigmentation with the use of estrogen pills after labor have also been reported.

Furthermore, type B PDLs may not appear in all of a woman's pregnancies and may be present only for a limited period of time during pregnancy, especially at the end. This finding may be explained by the possible presence of a local trigger factor occurring only in some pregnancies or during some periods of the same pregnancy.<sup>3</sup>

There is no Brazilian case reported in the indexed literature. However, due to miscegenation, it is probable that PDLs are common in Brazil, but that they are underdiagnosed. Regression occurs spontaneously from 6 to 12 months after delivery; hence, treatment is not required. Successful use of Q-switched Alexandrite 755nm has been reported.<sup>5,6</sup> Anyhow, type B PDLs should be considered a physiological pigmentary alteration related to pregnancy.<sup>3</sup> □

**Abstract:** Pigmentary demarcation lines are physiologically abrupt transition lines from areas of deeper pigmentation to less pigmented areas. They are most often seen in African and Japanese individuals and rarely observed in Caucasians. There are eight types of pigmentary demarcation lines. The one described here, type B, is restricted to women and is associated with pregnancy in non-black patients. This type of pigmentary demarcation line occurs in the posterior aspect of the legs, extending from the perineum to the ankle. Its distribution follows the Voigt's lines, which define the distribution of peripheral nerves. Its pathogenesis remains unknown. Expectant treatment is used, and good results have been reported with the use of Q-switched Alexandrite laser.

**Keywords:** Hyperpigmentation; Pigmentation disorders; Pregnancy

**Resumo:** Linhas de demarcação pigmentar são linhas fisiológicas que correspondem a transições abruptas entre áreas mais escuras e mais claras. São mais comuns em africanos e japoneses, mas raras em brancos. Há 8 tipos, sendo a aqui descrita, tipo B, restrita a mulheres e relacionada a gestação em não negras. Este tipo de linha de demarcação pigmentar ocorre na face posterior dos membros inferiores estendendo-se do períneo ao tornozelo. Estas se localizam nas linhas de Voigt que são o trajeto dos nervos periféricos. Sua fisiopatogenia é incerta. O tratamento é expectante com relato de bom resultado com Q-switched Alexandrite laser.

**Palavras-chave:** Gravidez; Hiperpigmentação; Transtornos da pigmentação

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**MAILING ADDRESS:**

*Fernanda Homem de Mello de Souza Klein*  
*R. Cecília Daros Casagrande, 430 ap. 304 - Comércio*  
*CEP: 88802-400 - Criciúma - SC*  
*Brazil*  
*E-mail: dra.fernandaklein@gmail.com*

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