

Self-Resolving Vascular Compromise of the Digit Due to Congenital Constrictive Band: Case Report

Konjenital Konstrüktif Bant; Zorunlu Konservatif Yaklaşım

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ABSTRACT Ring constrictions cause circular bands on the digits or extremities usually due to amniotic bands. They may cause vascular compromise and autoamputations when constrictions are severe. Eleven-month-old boy presented with a red to purple and edematous 3rd toe of the left foot due to a constrictive circular band at the level of the proximal phalanx. Despite therapeutic measures the vascular compromise did not relieve and operation was recommended. The patients refused an operative procedure and the child was followed with nonsurgical therapies. Six months later, the patient demonstrated edema and congestion relief with marked smoothing of the band. The band has released and adapted to the growing structures of the digit. There was no growth disturbance or deformation in the affected digit.

Key Words: Amniotic band syndrome; abnormalities

ÖZET Amniyotik bantlar parmaklarda ya da ekstremitelerde sirküler bantlar oluşturan yüzük konstrüksiyonlarına neden olurlar. Bu konstrüksiyonlar şiddetli olduklarında dolaşım sıkıntısına ve otoamputasyona neden olabilirler. On bir aylık erkek hasta, sol ayağının 3. parmağında konstrüksiyon oluşturan sirküler banda bağlı olarak kırmızı, mor renkte ve ödemli ayak parmağı ile getirildi. Tedavi edici yöntemlere rağmen dolaşım sıkıntısı gerilemedi ve operasyon önerildi. Ebeveynlerin cerrahi bir işlemi kabul etmemesi üzerine cerrahi olmayan tedavilerle çocuk takip edildi. Altı ay sonra hasta bantın yumuşaması ile beraber ödem ve dolaşım sıkıntısının geçtiği, bantın serbestleştiği ve parmağın büyüyen yapısına uyum gösterdiği görüldü. Etkilenen parmakta büyüme geriliği ya da şekil bozukluğu gözlenmedi.

Anahtar Kelimeler: Amniyotik bant sendromu; anormallikler

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Constricting bands may cause vascular problems especially on extremities.¹ The child with a ring constriction may present with an edematous and congested digit. Proper physical examination is warranted despite the age of the child. A piece of hair around a toe may frequently be misperceived as a constrictive band and therefore a thorough examination of the child when naked is warranted. Usually operative measures are considered for band relief, however it may be challenging to justify an operation with a risk of digit loss and other potential anesthetic risks.

CASE REPORT

An eleven-month-old boy presented to emergency room with a red to purple and edematous 3rd toe of the left foot. He was irritated with the situation and the mother was unable to calm him for about 2 days. Physical examination demonstrated a constrictive circular band at the level of the proximal phalanx of the 3rd toe of the left foot. The toe was edematous and capillary refill was very fast. The digit was warm and tender. Distal to the band the digit was red to purple in color (Figure 1). Clinodactily of the fifth toe was present as well (Figure 2). Past medical history of the patient was uneventful. There was no presence of a foreign material like hair or thread around the digit. The mother was sure that the digit was normal and she has not realized a band before. The child had no other congenital abnormalities except a horse-shoe kidney found on routine examinations (Figure 3). Extremity elevation, an elastic sleeve and vascularity control was applied to the patient. Anti-inflammatory drug and aspirin (10 mg/kg, orally) medication were prescribed to the patient. Hospitalization was recommended to patient's family but they refused it and wanted to come to daily visits. One month later, the vascular com-



FIGURE 1: Edematous and congested digit, dorsal view.
(See for colored form <http://pediatri.turkiyeklinikleri.com/>)



FIGURE 2: Edematous and congested digit, plantar view.
(See for colored form <http://pediatri.turkiyeklinikleri.com/>)

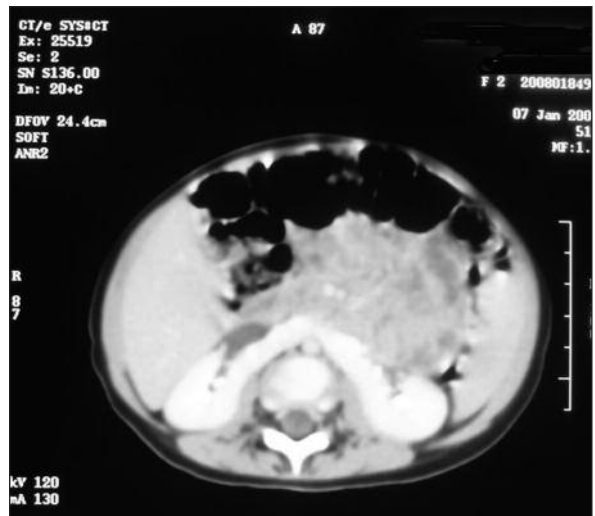


FIGURE 3: The horse-shoe kidney image.

promise persisted and an operation to release constriction was suggested.

Parents were informed about the possible complications of the surgery and they were anxious about the possibility of digital loss, and they refused surgery. Routine visits were planned and the medications were given as before with education of the parents for the vascularity control.



FIGURE 4: The digit at the 6th month with normal vascularity.
(See for colored form <http://pediatri.turkiyeklinikleri.com/>)

About 6 months later the patient demonstrated full relief of the edema and the venous congestion. The band persisted but seemed to adapt the growing structures of the digit (Figure 4).

DISCUSSION

Congenital constriction band syndrome is a rare entity with a wide spectrum of associated congenital anomalies.¹ Ring constrictions cause circular

bands on the digits or extremities usually due to amniotic bands. They may cause vascular compromise and autoamputations when constrictions are severe.^{2,3} In case of deep constrictions, excision of the band and multiple z-plasties are performed to decrease edema and relieve venous congestion and sometimes arterial constriction.^{4,5} Mutaf et al. has demonstrated a new technique eliminating the soft tissue deficiency and providing a normal extremity contour. In this technique, following excision of the fibrotic constriction ring, the groove is filled with the turnover dermofat flaps elevated from both sides of the ring in an alternating pattern. Then skin closure is done with rectangular-plasty technique.⁶

The parents in the following case refused a surgical procedure and continued to apply medical therapies. The constrictive band adapted to the growing structures of the digit and finally the vascular compromise was relieved. There was no growth disturbance of the digit with full relief of edema and congestion. The constriction was weakened at the 6th month of follow-up when the child was 17-month-old. The operation may be postponed due to the high risk of vascular damage during the operation and the complications seen postoperatively.

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