

## A Case Report: Corpus Callosum Infarct Associated With The Conversion Finding

### Vaka Sunumu: Konversiyon Bulguları Eşliğinde Korus Kallosum Infarktı

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#### ABSTRACT

A 23-year-old female patient diagnosed corpus callosum infarction with conversion findings was presented with the clinical laboratory and radiographic findings. The patient who had no previous illness had a successful cesarean operation 15 days ago. The patient came to our emergency service due to the current symptoms such as impaired vision, collapse due to the disorder in sight, trembling hands, and saying nonsense words. No significant findings were found in the blood tests at the emergency service performed on the patient. Cerebral MRI venography and cerebral diffusion MRI were tested on the patient. Cerebral diffuse MRI of the patient showed an infarct compatible lesion with diffuse limitation measured with the dimensions of AP 10.5 mm (ML 16 mm at its widest point) in the level of the corpus callosum splenium. The clinical indications that result from corpus callosum abnormalities vary. In approximately one-third of patients, psychiatric tables develop. However, corpus callosum infarction, which begins with pure psychiatric findings, is rarely observed in the literature. This case was written due to the presence of concomitant corpus callosum inflation with conversion findings.

**Keywords:** Corpus callosum, emergency service, conversion.

#### ÖZET

Yirmi üç yaşında konversiyon bulgular eşliğinde korus kallozum infarktı saptanan bir kadın hasta, klinik laboratuvar ve radyolojik bulgular eşliğinde sunuldu. Daha öncesinde herhangi bir hastalığı olmayan hasta, 15 gün önce başarılı sezeryan operasyonu geçirmiş. Hastanın başvuru günü başlayan görmede bozukluk, görme bozukluğu nedeni yere yığılma, ellerde titreme ve anlamsız kelimeler söyleme gibi semptomları üzerine acil servisimize başvurmuştur. Hastanın acil serviste yapılan kan tetkiklerinde anlamlı bulguya rastlanmadı. Hastanın serebral MRG venografisi ve serebral difüzyon MRG'si çekildi. Serebral difüzyon MRG'sinde korus kallozum spleniumu düzeyinde (en geniş yerinde ML 16mm) AP 10,5mm boyutlarında ölçülen difüzyon kısıtlılığı gösteren infarktla uyumlu lezyon görüldü. Korus kallozum anormallikleri sonucu gelişen klinik belirtiler değişkenlik göstermektedir. Olguların yaklaşık üçte birinde ise psikiyatrik tablolar gelişmektedir. Ancak saf psikiyatrik bulgular ile başlayan korus kallozum infarktı literatürde nadiren gözlenmektedir. Bu vaka konversiyon bulgularla eş zamanlı korus kallozum enfarktı görülmesinden dolayı yazılmıştır.

**Anahtar Kelimeler:** Korus kallosum, acil servis, konversiyon

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## Introduction

The corpus callosum (CC) is the largest commissural structure that provides connections between cortical and subcortical neurons located in the half of two brains.<sup>(1)</sup> In general, it is separated into front to back four divisions; rostrum, genu, trunk and splenium.<sup>(2)</sup> CC can be primarily or secondarily affected in many pathological conditions such as metabolic diseases, infectious diseases and brain tumors. In this report with a case in which a corpus callosum infarction led by convertive symptoms led, it is aimed to discuss the relationship between convertive symptoms and corpus callosum in the light of the literature.

## Case Report

A 23-year-old female patient underwent cesarean operation approximately fifteen days ago. In the operation, the baby came to the world alive, and the patient did not develop any pathological symptoms. The patient applied to our emergency department with the complaints of blurred vision, collapsing due to the vision disorders, tremoring hands, and meaningless words during the last few days. The patient was evaluated as general condition: normal, consciousness, co-operative. After the patient's anamnesis, a medical examination was performed. The patient's Babinski test was evaluated as negative, and no power loss was detected as a side effect. The patient indicated that his vision began to diminish during the examination. At the upper extremities of the patient with a decrease in vision the patient underwent a tremor. An attempt was made to contact the patient, but the cooperation of the patient disappeared. The patient began to mumble meaningless words and make voices. Symptoms disappeared later.

The patient's complete blood count, biochemistry level, coagulation tests, brucella agglutination test, brucella rose bengal test, and hepatitis tests were negative. TSH, T<sub>3</sub>, T<sub>4</sub>, anti Tg Ab, Vitamin B<sub>12</sub>, Folate, HbA<sub>1c</sub>, protein C levels were normal. Antiphospholipid IgG and IgM, Anticardiolipin IgM and IgG were determined to be negative. The patient had CMV IgM, Toxoplasma IgM and IgG, and rubella IgM negative. Sedimentation in the patients: 34 (0-20), CRP: 9,04 (0,00-5,00), CMV IgG positive.

Cerebral diffuse MRI revealed a smoothly contoured lesion in AP 10.5mm size at the region of the corpus callosum splenium (ML 16mm at its widest region) which has a similar signaling characteristic with all sequences of substantia grisea, a slight increase in signal in specifically T<sub>2</sub>A and FLAIR sequential, and a significant enlargement in splenium at sagittal. The MRI venography, ECHO, bilateral carotid artery color doppler USG, EEG, bilateral vertebral

artery color doppler USG, and cerebral MRI angiography of the patient were normal. The patient is discharged with the final healing of the clinic service.

## Discussion

CC is the main interhemispheric junction of the brain, consisting of approximately 180 million axons, most of which connect to the homologous areas of the right and left cerebral cortices.<sup>(3)</sup> Cortex induces motor, sensory and cognitive performance of the brain by stimulating the opposite side of the hemisphere. Ferrara reported that post-traumatic medial frontal lobe, corpus callosum, and cingulate gingival contusion or ischemic-ending mutism may occur in his published publication.<sup>(4)</sup> Previous studies have reported that although there may be no problem in the neuropsychological studies, corpus callosum atrophy or total agenesis may cause no deficits in the functions of the partially preserved corpus callosum.<sup>(5-6)</sup> In the studies of Sauerwein and colleagues comparing normal controls with those with total agenesis of corpus callosum, there was no difference between the two groups in the interhemispheric transmission tasks.<sup>(7)</sup> This is explained by the increased use of ipsilateral and subcortical pathways.<sup>(7-8)</sup> In this case, it could be related to the complete remission of converted symptoms after radiological and clinical remissions.

In all patients with OCD (Obsessive Compulsive Disorder), all corpus callosum regions' large sizes except isthmus have been shown to be associated with OCD symptom severity.<sup>(9)</sup> The increase in corpus callosum dimensions associated with age in normal subjects was not detected in OCD patients. A subsequent corpus callosum signal intensity study<sup>(9-10)</sup>, in the same pediatric OCD group, reported an increase in signal intensity at the corpus callosum anterior region in OCD patients. In our case, as in OCD, the presence of conversion findings was associated with the corpus callosum effect.

In another study, corpus callosum areas were found to be small in psychotic bipolar patients.<sup>(11)</sup> The findings of this study were supported by a study in which another group of researchers determined that genetic, posterior and isthmus regions were shrinking.<sup>(12)</sup> Another study on adult bipolar patients reported no difference in corpus callosum areas between bipolar patients and healthy controls.<sup>(13)</sup> As seen in these studies, corpus callosum lesions could be associated with many psychiatric conditions. Often it can accompany the present neurological picture, but it can lead as well as it is in the case.

## Conclusion

Isolated lesions of CC are rare which shows that the anomalies observed in this structure should be warning in

terms of the presence of other cerebral anomalies. This case is found to be significant in terms of presence of corpus callosum infarction in patients presenting with conversion findings. The corpus callosum infarct with conversion findings is seen as worthy of sharing due to possible patients for the emergency service.

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