

SAĞ KORONER ARTERDE DİSEKSİYONU TAKLİT EDEN “AKORDEON FENOMENİ”: VAKA SUNUMU

Case Report : “Accordion Phenomenon” In Right Coronary Artery Mimicking the Coronary Artery Dissection

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ÖZET

Akordeon etkisi tortüoze arterlerin bir psödolezyonu olup, yalancı diseksiyon, spazm, trombus ve emboli görünümü ile karışabilir. Bu durum hekimlerde büyük bir endişe uyandırır. Klinik uygulamada perkütan koroner girişim esnasında koroner arter diseksiyonunun görülmesi yaygındır. Gereksiz müdahalelerden kaçınmak için akordeon etkisi ile perkütan koroner girişimin potansiyel komplikasyonları arasında ayırıcı tanı yapmak gerekir. Bundan dolayı girişimsel kardiyologların koroner girişimler sırasında akordeon etkisini akıllarında bulundurmaları gerekmektedir. Burada, stabil anjina pektoris tanısıyla başvuran koroner anjiyografide sağ koroner arterin proximal segmentinde akordeon etkisi bulunan 75 yaşında bir olgu sunulmuştur.

Anahtar Sözcükler: Akordeon etkisi; Psödolezyon; Sağ koroner arter

ABSTRACT

The accordion effect is a pseudolesion of the tortuous arteries that may be interfered with false dissection, spasm, thrombus and embolism. This is a major concern for physicians. In clinical practice, coronary artery dissection is common during percutaneous coronary intervention. It is essential to make the differential diagnosis between the accordion phenomenon and potential complications of percutaneous coronary interventions, to avoid further therapeutic intervention. Therefore, interventional cardiologists should remember the accordion effect during coronary interventions. Here, we reported a 75-year-old man, with accordion effect in proximal segment of right coronary artery, detected in coronary angiography and presented with stable angina pectoris.

Keywords: Accordion effect; Pseudolesion; Right coronary artery

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INTRODUCTION

Accordion phenomenon is pseudolesion resulting from the flattening of the vessel due to hard guidewire or balloon during percutaneous coronary intervention (PCI) of the tortuous vessels (1,2). These lesions may have similar appearance as dissection, spasm and thrombus. Each coronary intervention carries a potential risk of iatrogenic complications in adjunction to expected benefit if effective percutaneous myocardial revascularization is achieved. Sometimes it is difficult to distinguish accordion phenomenon from complications (3). When accordion phenomenon was misdiagnosed as a possible major complications of PCI such as dissection, thrombus, spasm or embolisation of vessel, it can lead real complications following unnecessary postdilatation of the segment with accordion phenomenon by balloon or stenting (4). This phenomenon is generally observed in case of hard guide wire usage. However, here, we presented a case of an accordion phenomenon developed with the use of soft guide wire.

CASE REPORT

A 75-year-old man presented with symptoms of stable anginal chest pain. Physical examination showed no abnormal findings. Electrocardiogram had T wave negativity in inferior leads. Transthoracic echocardiography revealed left ventricle ejection fraction of 55% with inferior wall hypokinesia. Troponin I and creatine kinase-MB were negative. Coronary angiogram was normal except 80% stenosis in the middle segment of the right coronary artery (RCA). Accordingly, revascularization of RCA was planned and RCA was intubated with 6F Judkins 4 (Cordis, Johnson&Johnson, Miami, FL, USA) right guiding catheter. A 0.014 inch soft guide wire was advanced across the RCA lesion without difficulty. However, control view revealed dissection or spasm-like lesion in the proximal RCA (Figure 1). Accordingly, 150 micrograms of nitroglycerin was applied via intracoronary route. Following this, stenosis in the mid-RCA was predilated up to 14 atm (Invader 2.0x 12 mm PTCA balloon; Alvimedica, Assen, the Netherlands) and a drug eluting stent (Cre8™ CID, Saluggia, Italy 2.75 x

20 mm) was deployed at 16 atm. Angiography revealed a good result at the stented segment and the stent balloon was pulled back. However, the appearance of the proximal lesion persisted. There was no clear explanation for this appearance except accordion phenomenon, thus the guide wire was pulled back. Then after, the control images showed that slope of the proximal RCA returned to normal and the pseudolesion disappeared (Figure 2).



Figure 1: Iatrogenic pseudolesion (arrow).

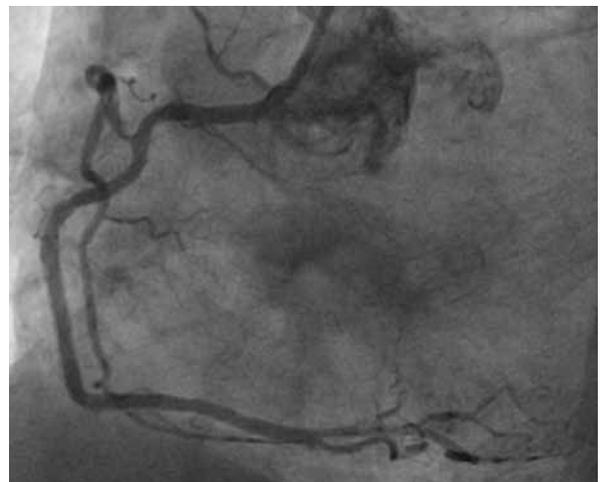


Figure 2: Lesion disappearance after removal of guide wire.

DISCUSSION

The correct diagnosis of PCI complications is the most important factor to manage further treatment options. Thus, the accordion phenomenon is a rare but very important pseudo complication which should be kept in mind. Accordion phenomenon usually develops due to stiff materials in the tortuous vessels. This may cause an impairment of coronary flow and ischemia. Suspicion for accordion phenomenon is the initial step in the diagnosis. In these cases, intracoronary vasodilators are usually not beneficial and complete or partial removal of the wire is required to restore the original configuration of the coronary artery (5). Nevertheless, this step should be taken with caution, because it carries the risk of removing the guidewire from an actual dissection or lesion. To avoid this, withdrawal of the guidewire can be halted while the floppy part of the guidewire is still in the lesion. Another option is the use of over-the-wire balloons or microcatheters, which can conform to the curve of a tortuous artery (6,7). Whereas, intervention related coronary artery spasm is prevalent and readily recognizable for its association with stent implantation and balloon dilatation, and often transient nature upon administration of intracoronary nitroglycerine. Segments not associated with direct intervention site may also be affected (8,9). Often this phenomenon occurs with a hard guide wire or balloon, whereas in our case, a soft floppy wire was in use to produce the pseudolesion. In our case, differential diagnosis of the proximal lesion with thrombosis and dissection was very crucial since misdiagnosis would lead unnecessary further coronary interventions. In conclusion, the accordion phenomenon is a rare event, but it must be kept in mind during PCI. Its morphology is nearly identical with vessel dissection, spasm or thrombosis, but it doesn't require any special treatment except pulling back guide wire or balloon. Immediate and correct diagnosis of accordion phenomenon prevents the consequences of unnecessary dilatation of normal coronary segment.

REFERENCES

1. Rauh RA, Ninneman RW, Joseph D, Gupta VK, Senior DG, Miller WP. Accordion effect in tortuous right coronary arteries during

percutaneous transluminal coronary angioplasty. *Cathet Cardiovasc Diagn.* 1991;23:107-10.
2. Tenaglia AN, Tchong JE, Phillips HR, Stack RS. Creation of pseudonarrowing during coronary angioplasty. *Am J Cardiol* 1991;67:658-9.
3. Chung H, Lee SJ, Park JK, Choi IS, Won HY, Kim S, et al. Spontaneous coronary artery dissection mimicking coronary spasm diagnosed by intravascular ultrasonography. *Korean Circ J.* 2013;43:491-6.
4. Alvarez JAG, Leiva G, Manavella B, Cosentino A. Left main crumpling during left anterior descending angioplasty: Hitherto unreported location for the "accordion effect". *Cathet Cardiovasc Intervent* 2001;52:363-7.
5. E. Puymirat, M. Vanderheyden, B. De Bruyne Accordion phenomenon induced by pressure wire *Int J Cardiol*, 148 (3) (2011), 375–376.
6. Goel PK, Agarwal A, Kapoor A. "Concertina" effect during angioplasty of tortuous right and left coronary arteries and importance of using over-the-wire system: a case report. *Indian Heart J* 2001;53(1):87-90.
7. Kilic ID, Yildiz BS, Alihanoglu YI, Evrengul H. The accordion phenomenon in the left anterior descending coronary artery. *Tex Heart Inst J.* 2014 ;41(5):562-3.
8. Valuckienė Z, Vasylius T, Unikas R. Left anterior descending coronary artery spasm and "accordion effect" mimicking coronary artery dissection. *Medicina (Kaunas).* 2014;50(5):309-11.
9. E. Puymirat, M. Vanderheyden, B. De Bruyne Accordion phenomenon induced by pressure wire *Int J Cardiol*, 148 (3) (2011);375–376.