



Revista Portuguesa de
Cardiologia
Portuguese Journal of **Cardiology**
www.revportcardiol.org



REVIEW ARTICLE

Spontaneous coronary artery dissection: A single-center case series and literature review

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KEYWORDS

Spontaneous coronary dissection;
Acute coronary syndrome;
Intramural hematoma;
Coronary angiography

Abstract

Background: Spontaneous coronary artery dissection (SCAD) is an unusual cause of acute coronary syndrome (ACS). Better recognition and diagnosis has raised awareness of this condition. However, the pathophysiology of SCAD and its prognosis are still little understood. We aimed to investigate the characteristics and prognosis of patients with SCAD, and subsequently performed a review of literature.

Methods: Single-center, retrospective study performed in patients hospitalized from January 2010 to December 2016 with suspected ACS (n=5002) whose final diagnosis was SCAD (n=27; 0.5%).

Results: Patients with SCAD were mainly female (81.5%; n=22), with median age of 56. Predisposing factors were identified in 12 (44%) patients and precipitating factors in three (11.1%). Non-ST elevation myocardial infarction (NSTEMI) was the main form of presentation (51.9%). The left anterior descending artery (LAD) territory was the most commonly involved (n=12, 44.4%). Type 2 dissection was the most prevalent angiographic pattern (n=17, 63%). The majority of patients (n=15; 55.6%) were managed medically and the remaining patients underwent percutaneous coronary intervention (PCI) with drug-eluting stents. Seven patients re-infarcted while in the hospital. Over the median follow-up period of 20 months, 7.4% of patients (n=2) had symptoms of heart failure (HF) and 14.8% developed ACS (in three patients the event occurred in a coronary territory other than that of the index case, and in one patient it occurred in the previously affected territory). There were no deaths.

Conclusion: In the studied population, SCAD was more prevalent in middle-aged women. Despite the high prevalence of in-hospital re-infarction or during follow-up, the prognosis was good overall.

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<https://doi.org/10.1016/j.repc.2017.07.019>

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PALAVRAS-CHAVE

Dissecção coronária espontânea;
Síndrome coronária aguda;
Hematoma intramural;
Angiografia coronária

Dissecção coronária espontânea – Uma série de casos de um centro e revisão da literatura

Resumo

Introdução: A dissecção coronária espontânea (DCE) é uma causa infrequente de síndrome coronária aguda. O crescente reconhecimento e diagnóstico dessa entidade tem alertado os clínicos para a sua ocorrência. Porém, a fisiopatologia da DCE e o respetivo prognóstico ainda se encontram mal esclarecidos. O objetivo deste estudo foi investigar as características e o prognóstico dos doentes com DCE, efetuando-se, posteriormente, uma revisão da literatura.

Métodos: Estudo retrospectivo, unicêntrico, realizado em doentes admitidos de janeiro de 2010 a dezembro de 2016, sob a suspeita de SCA (n = 5002), cujo diagnóstico final foi DCE (n = 27; 0,5%).

Resultados: Os doentes com DCE eram na sua maioria mulheres (81,5%; n = 22), com mediana de 56 anos. Em 12 doentes (44%) foram identificados fatores predisponentes e em três (11,1%) fatores precipitantes. O enfarte sem supradesnivelamento do segmento ST foi a forma mais frequente de apresentação (51,9%), o território da descendente anterior foi o mais frequentemente envolvido (n = 12, 44,4%). O padrão angiográfico de dissecção tipo 2 (n = 17, 63%) foi o mais prevalente. A maioria dos doentes (n = 15; 55,6%) foi tratada medicamente, os restantes fizeram angioplastia com *stents* revestidos com fármaco. Durante a hospitalização, sete doentes tiveram re-enfarte. Durante o período mediano de 20 meses de seguimento, 7,4% (n = 2) dos doentes apresentaram sintomas de insuficiência cardíaca e 14,8% apresentaram SCA (em três doentes o evento ocorreu num território coronário diferente do caso índice e em um doente no território coronário previamente afetado). Não ocorreram eventos mortais.

Conclusão: Na população estudada, a dissecção coronária espontânea foi mais prevalente nas mulheres de meia-idade. Apesar da prevalência de re-enfarte durante e após a hospitalização não ser insignificante, o prognóstico, globalmente, foi bom.

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List of abbreviations

ACS	Acute coronary syndrome
CTD	Connective tissue disease
Diam.	Diameter
Dim.	Dimensions
HF	Heart failure
HT	Hormone therapy
LAD	Left anterior descending artery
LCX	Left circumflex artery
LMCA	Left main coronary artery
MI	Myocardial infarction
MP	Multiparity
NSTEMI	Non-ST elevation myocardial infarction
PCI	Percutaneous coronary intervention
PH stress	Physical stress
RCA	Right coronary artery
SCA	Sudden cardiac arrest
SCAD	Spontaneous coronary artery dissection
SID	Systemic inflammatory disease
STEMI	ST-elevation myocardial infarction

Introduction

Spontaneous coronary artery dissection (SCAD) is defined as a non-traumatic, non-iatrogenic separation of the coronary artery walls, creating a false lumen.¹ Traditionally thought of as rare, for many years only anecdotal cases were reported. However, in recent years, probably since the increased use of coronary angiography and intracoronary imaging techniques in acute coronary syndromes (ACS), it has been recognized as an important cause of myocardial infarction, especially in women.²⁻⁴ The true prevalence of SCAD in the general population is unfortunately unknown because of under-diagnosis. However, based on modern series, its prevalence in ACS is 1.7-4%.^{5,6} This study aimed to investigate the characteristics, clinical presentation, therapeutic approach and outcome in patients with ACS presenting with SCAD over a period of seven years.

Methods

This was a descriptive and retrospective analysis of patients admitted to a Cardiology Department over seven consecutive years, from January 2010 to December 2016, with a diagnosis of ACS due to SCAD. SCAD was diagnosed in the presence of angiographic characteristics on coronary angiography and was categorized according to the Saw

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