

Characterizing Carotid Dissection Patients with Fibromuscular Dysplasia

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Hypothesis

- There are significant differences between patient characteristics in patients with fibromuscular dysplasia and carotid dissection with recurrence versus those without recurrence.

Introduction

- Fibromuscular Dysplasia (FMD) is a non-atherosclerotic non-inflammatory vascular disease.
- FMD can lead to many abnormalities, such as narrowing, dissections, a beaded appearance, or aneurysms.
- The exact cause of FMD is unknown. Many believe it to be linked with genetics, smoking history, hypertension, hyperlipidemia.
- Though it affects many other races, ages and males, this disease mainly affects middle aged Caucasian females.
- Patients with carotid dissections can often report migraine type headaches, pulsatile tinnitus (whooshing in ear), Horner's Syndrome, or a neurologic deficit.
- Patients with FMD will have a higher carotid dissection risk than patients without it.

Methodology

- 79 patients with a carotid dissection either prior to or during enrollment into the United States FMD Registry at CCF were included
- Medical charts were retrospectively reviewed
- Charts were abstracted for family history and past medical history, presenting symptoms at the time of diagnosis, treatment of dissection, what vessels were involved, and what events were present in the follow up.
- Patient characteristics were analyzed using univariate analysis to obtain percentages and means
- Bivariate analysis between recurrent dissection and patient characteristics were performed using chi-2 testing for categorical variables and students t-test for continuous variables

Data

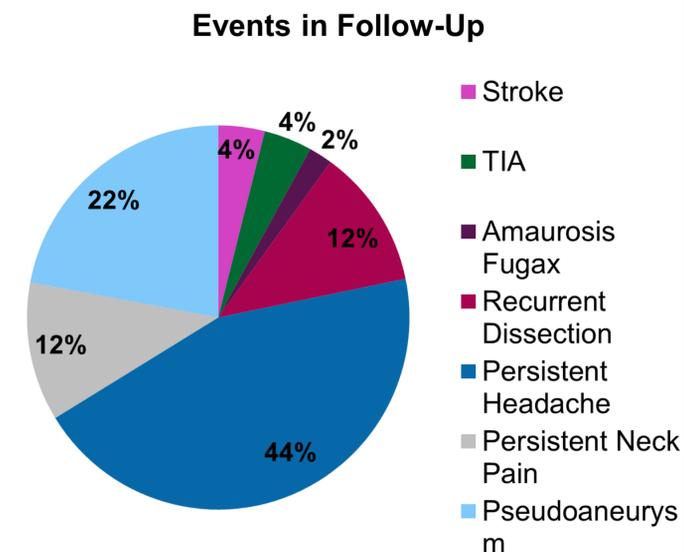
Total	N = 79	%
Women	73	92.5
BMI Median (IQR)	23.8 (20.7-28.6)	
Age at first dissection mean ±SD	45.9±8.4	
White	77	97.5

Past Medical History	N	%
Hypertension	42	53.2
Hyperlipidemia	45	57.0
Aneurysm	13	16.5
Noncervical Dissection	6	7.6
Smoking	26	32.9
Oral Contraceptive	46	82.1
Hormone Use	17	35.4

Family History	N	%
FMD	2	2.5
Dissection	5	6.3
Stroke	41	51.9
Sudden Death	25	31.6
Aneurysm	22	27.8

Symptoms	N	%
Headache	62/69	89.9
Migraine Headache	35/52	67.3
Neck Pain	41/64	64.1
Horner's Syndrome	24/60	40.6
Neurologic Deficit	37/71	52.1
Pulsatile Tinnitus	26/64	40.6
Found Incidentally	22	23.4

Results



	No Recurrence N=66	Recurrent Dissection N=13	P-Value
Age at First Dissection Median (IQR)	44 (40.25-45)	46.5 (40-51)	.505
BMI	21.5 (19-24.1)	24.6 (21.5-29.1)	.017
Past Medical History			
Hypertension	41.7%	56.9%	.645
Hyperlipidemia	46.2%	59.1%	.330
Smoking	38.5%	31.8%	.645
Oral Contraceptive	100.0%	80.0%	.578
Hormonal Use	80.0%	30.2%	.047
Noncervical Dissection	11.1%	12.8%	.889
Family History			
FMD	0.0%	3.2%	1.0
Arterial Dissection	9.1%	6.3%	.558

Conclusions

- Cerebrovascular dissections are not a rare occurrence in patients with FMD
- There are differences in BMI and history of hormonal use in patients with and without recurrent dissection.
- Family history, and a smoking history were not associated recurrent dissection.
- Internal carotid artery dissection is more common than vertebral dissection
- Most carotid dissections were treated medically, with the most common agent prescribed being aspirin.
- The most prevalent event during follow up was a persistent headache.
- Cerebrovascular dissections are not a rare occurrence in patients with FMD

(Figure 1) Catheter-based angiogram of the right internal carotid artery demonstrating dissection (white arrow) and pseudoaneurysm (red arrow)



Recommendations

- If a patient was to be diagnosed with FMD then the doctor should perform testing to see if the patient also has carotid pathology.
- Middle aged women who present with persistent headache and neurologic symptoms should be tested for carotid dissection and FMD.
- There may be factors that increase the risk of carotid dissection in patients with FMD, and further study with larger numbers of patients may be beneficial.