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Brief Report

Vascular Lesions in Intravascular Drug Abusers in Guilan, North of Iran

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Intravenous drug abuse is an increasing social and health problem. Repeated injuries to the veins, injection of some types of insoluble substances, and needle sharing habits result in various complications. Increasing incidence of major vascular complications has been reported worldwide. The objective of this study was to determine the epidemiology of vascular lesions in drug abusers.

Medical records of 50 patients who were consecutively admitted to the surgical wards, presenting with a pulsatile mass, infection of the injection site, or venous thrombosis in the groin or cubital fossa were retrospectively reviewed.

Of 50 patients studied, 88% were males and 12% were females. Most of the drug abusers were young. Eighty percent of the patients had an infected injection site in the groin, 12% in the cubital fossa, and 8% in other sites. Seventy-six percent of the patients had been injecting drugs for 10 years and the remaining 24% for more than 10 years. Pseudo-aneurysm was the final diagnosis in 27 (54%) patients. In females, the vascular lesions diagnosed were pseudo-aneurysm in four, deep venous thrombosis in one, and arterio-venous fistula in another patient. Among male patients, pseudo-aneurysm was present in 23 (52%), venous thrombosis in eight (18%), necrotizing fascitis in three (7%), vascular abscess in two, and arterio-venous fistula in one (5%). Most of the vascular lesions involved the groin or cubital fossa and presented as a pulsatile mass. They may benefit from early referral to a vascular surgery unit.

Infected pseudo-aneurysm is the most common pathology in our population and the best management for all infected pseudo-aneurysms is the ligation of the artery.

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Introduction

Intravenous drug abuse is an increasing social and health problem.[1] Repeated venipunctures, injection of some types of insoluble substances, and needle sharing habits among drug users of a poor socio-economic background result in various complications.[2, 3]

An increase in the incidence of major vascular complications has been reported worldwide.[4, 5] However, we regularly observe peripheral vascular lesions in drug abusers. The objective of this study was to determine the epidemiology of vascular lesions, and surgical techniques used for their treatment in a population of intravenous drug abusers.

Patients and Methods

Medical records of 50 patients who were consecutively admitted to the surgical wards, presenting with a pulsatile mass, infection of the injection site, or venous thrombosis in the groin or cubital fossa within a 10-year period, from 1996 through 2006, were retrospectively reviewed. Data regarding demography, age, gender, period of intravenous drug injection, site of injection, and type of pathologic lesion were extracted from hospital records and analyzed.

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Results

Of 50 patients studied, 88% were males and 12% were females (Table 1). Male to female ratio of intravenous drug abusers in this study was 7:1. Most of the drug abusers were young; 58% aged between 15 and 34 years (Table 2). Eighty percent of the patients had injection site lesions in the groin, 12% in the cubital fossa, and 8% in other sites (Table 3). Seventy-six percent of the patients had been injecting drugs for 10 years or less (Table 4).

Pseudo-aneurysm was the final diagnosis in 27 (54%) patients. Other lesions are listed in Table 5.

In females, vascular lesions were diagnosed as pseudo-aneurysm in four (67%), deep venous thrombosis in one (17%), and arterio-venous fistula in another patient.

Among male patients, pseudo-aneurysm was present in 23 (52%), venous thrombosis in eight (18%), necrotizing fascitis in three (7%), vascular abscess in one (5%), and arterio-venous fistula in another (5%) patient.

Discussion

This study on the vascular complications in intravenous drug abusers is the first study on drug addicts in Guilan, North of Iran.

Most of the patients suffering from vascular lesions (88%) were males. This incidence rate correlates with the prevalence of drug addicts in males in this region.[2, 3] Those patients aged 25 to 35 years were most commonly affected. A study on 92 intravenous drug abusers carried out in Bristol in 2000, has reported similar results.[6]

With regards to the site of injection, the most common site was the groin involving 80% of the cases. According to a study on 200 intravenous drug abusers performed in 2001 in Sydney, Australia, the most common (99%) injection site was the cubital fossa.[7]

As uncomplicated cases of intravenous drug abusers were not included in this study, it seems that long-term addicts who were suffering from complications had used the groin as the last remaining accessible site for intravenous drug injection. Among the patients studied, the first site of approach for intravenous injection in most cases was the cubital fossa but the site most affected with a lesion was the groin. Among the complicated patients, pseudo-aneurysm of the femoral artery comprised 54% of the cases while a similar study carried out in Geneva reported the venous thrombosis as the most common vascular pathology among intravenous drug abusers.[8]

A recent study published in Tehran,[9] suggested that the increased incidence of intravenous drug abuse has led to more patients presenting with complications, both acute and chronic. This is almost certainly the result of the injection of insoluble substances, repeated venipuncture, and needle sharing habits.[3, 10] A variety of clinical presentations have been reported by many studies.[4, 5, 11]

Makowar et al reported that over a third of intravenous drug abuse-related admissions required surgery.[12] Besides vascular and soft tissue complications, a large number of such cases suffer

Table 1. Gender distribution of the patients.

Gender	No.	Incidence
Male	44	88%
Female	6	12%
Total	**50**	**100%**

Table 2. Age distribution of the patients.

Age group (yr)	No.	%
15 – 34	29	58%
35 – 44	9	18%
45 – 54	6	12%
55 – 74	6	12%

Table 3. Distribution of the injection site.

Injecting site	No.	%
Groin	40	80%
Cubital fossa	6	12%
Calf region	2	4%
Brachial area	1	2%
Subclavian	1	2%
Total	**50**	**100%**

Table 4. Period of drug injection.

Age group (yr)	No.	%
15	25	50%
610	13	26%
1115	8	16%
>15	4	8%
Total	**50**	**100%**

Table 5. Frequency of type of lesion.

Type of lesion	No.	%
Pseudo-aneurysm	27	54%
DVT*	9	18%
Vascular tear	6	12%
AV** fistula	3	6%
Necrotizing fascitis	3	6%
Vascular abscess	2	4%
Total	**50**	**100%**

*=deep venous thrombosis; **=arterio-venous.

from infections like superficial cellulitis, abscess, extensive necrotizing fascitis,[13, 14] and infected false aneurysm.

In the present study, 54% of the lesions were arterial, and pseudo-aneurysm and necrotizing fascitis comprised only 4% and 6% of the lesions, respectively. Therefore, the results of this study is in keeping with the results of studies carried out abroad. The most common arterial complication among intravenous drug abusers was infected pseudo-aneurysm of the femoral artery, as also reported by other researchers.[15]

Simple arterial ligation and resection of the infected tissue was applied in all cases of pseudo-aneurysm in this population.

Of course, 36% of our patients subsequently underwent minor amputations. The amputation rate in a similar study by Patel et al was 33% of the ligations.[15] In a study by Arora et al simple arterial ligation did not result in amputation in any of the patients. In comparison with ligation, reconstruction surgery has been reported to have more complications and ultimately lead to amputations.[16]

According to the experience of previous researchers, we selected candidates for ligation on the basis of the degree of initial infection and the segment of femoral artery involved. In our study too, the amputation rate was highest in those patients with pseudo-aneurysm of the femoral bifurcation. Some researchers recommend early reconstruction of all major vessels.[17, 18]

The prevalence of injecting drug use has increased more rapidly during the past decade and will continue to rise in Iran.[19]

The results of this study suggest that intravenous drug abuse is gradually increasing in the young male population of this region too. This issue needs more attention from the health-care authorities. Most lesions involve the groin and present as soft swellings, hence, may be misdiagnosed as lymphadenitis or simple abscess. Such cases may benefit from early referral to a vascular surgery unit.

Infected pseudo-aneurysm is the most common pathology, and the best management for all infected pseudo-aneurysms is the ligation of the artery.

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