

Discomfort Reported by Patients After Cardiac Catheterization Using the Femoral or Radial Approaches

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ABSTRACT

Background: Complaints of patients undergoing invasive percutaneous procedures are a frequent finding. Our objective was to assess the discomfort of patients undergoing cardiac catheterization using femoral or radial approach. **Methods:** Cross-sectional study with a non-probabilistic sample of adults undergoing catheterization. Data were collected through a questionnaire. **Results:** We included 228 patients, of whom 205 underwent the procedure via the femoral approach and 23 by the radial approach. A 6 F arterial sheath was used in all patients. Mean age was 60.0 ± 11.5 years and most of them were male (50.4%). The main complaints were lumbar pain in 65.8% and malaise in 32.0% of the cases. In a scale of 0 to 10, the average value assigned for lumbar pain intensity was 5.0 ± 4.2 and 1.5 ± 2.7 for pain at the puncture site. Patients who used the radial approach reported having more pain at the puncture site than patients who used the femoral access (26.8% vs. 52.2%; $p = 0.01$). However, patients who used the femoral approach most often reported lumbar pain (69.8% vs. 30.4%; $p < 0.01$) and malaise (34.6% vs. 8.7%; $p = 0.01$). **Conclusions:** The predominant discomfort after femoral puncture was lumbar pain and in patients undergoing radial puncture it was pain at the access site. Our findings corroborate the recommendations for a clinical practice that promotes better patient care, including comfort measures, such as the use of cushions, changes in body position, supervised ambulation and the creation of a welcoming environment.

DESCRIPTORS: Cardiac catheterization. Radial artery. Femoral artery. Pain. Nursing care.

RESUMO

Desconfortos Relatados Pelos Pacientes Após Cateterismo Cardíaco Pelas Vias Femoral ou Radial

Introdução: Queixas são frequentes por parte dos pacientes submetidos a procedimentos invasivos percutâneos. Nosso objetivo foi verificar os desconfortos de pacientes submetidos a cateterismo cardíaco pelas vias femoral e radial. **Métodos:** Estudo transversal, com amostra não probabilística de adultos submetidos a cateterismo. Os dados foram coletados por meio de questionário. **Resultados:** Foram estudados 228 pacientes, sendo 205 que realizaram procedimento pela via femoral e 23 pela radial. Em todos os pacientes, foi utilizado o introdutor arterial 6 F. A média de idades foi de $60,0 \pm 11,5$ anos, e a maioria era do sexo masculino (50,4%). As principais queixas foram dor lombar (65,8%) e mal-estar (32,0%). Em uma escala de zero a 10, o valor médio atribuído para a intensidade de dor lombar foi de $5,0 \pm 4,2$ e de $1,5 \pm 2,7$ para dor no local da punção. Pacientes que realizaram o procedimento pela via radial referiram ter mais dor no local da punção do que os que utilizaram a via femoral (26,8% vs. 52,2%; $p = 0,01$). No entanto, os pacientes abordados por via femoral relataram mais frequentemente dor lombar (69,8% vs. 30,4%; $p < 0,01$) e mal-estar (34,6% vs. 8,7%; $p = 0,01$). **Conclusões:** O desconforto predominante pós-punção femoral foi a lombalgia e, naqueles submetidos à punção radial, foi a dor no local da punção. Nossos achados remetem a recomendações para a prática clínica que promova a qualidade da assistência, como instituir medidas de conforto ao paciente, como o uso de coxins, mudança de decúbito, auxílio na deambulação e criação de um ambiente acolhedor.

DESCRIPTORES: Cateterismo cardíaco. Artéria radial. Artéria femoral. Dor. Cuidados de enfermagem.

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Studies have shown that, despite the increasing technological advancement and of the use of contemporary techniques of diagnostic or therapeutic coronary intervention, discomforts related to the procedures are still observed.^{1,2} The radial approach is the option generally preferred by patients because of the increased comfort it brings, compared to the procedure performed via femoral artery.³ However, the femoral access is still the operator's choice, providing faster procedures, allowing for repeated interventions and the use of a greater range of materials, and requiring less training than the radial approach.¹ However, the choice of this route requires a period of bed rest, which leads to additional discomfort; furthermore, the in-hospital stay is longer.⁴ The radial approach, on the other hand, has the advantage of early ambulation, but presenting, among its limitations, the difficulty of puncture and the small caliber of the artery.⁵

It is observed that the manifestations of patients in relation to a prolonged bed rest in the supine position cause back pain and difficulty for physiological eliminations, besides the pain during compression of the access route. From the standpoint of the patient, the search for the origin of these complaints justifies this study. Thus, our goal was to describe the discomforts of patients undergoing cardiac catheterization, comparing radial and femoral access routes.

METHODS

Cross-sectional study, conducted on patients undergoing cardiac catheterization by radial or femoral access in a private hemodynamics service of Rio Grande do Sul, from April to June 2009. This service has a nurse on the morning-afternoon shift and six nursing technicians divided into two shifts. The sample was of the non-probabilistic type, and were included all patients who agreed to participate, of both genders, aged ≥ 18 years and presenting no complications during the procedure.

Data were collected before the patients were discharged home or for their original unit (intensive care or hospital clinic) by our Hemodynamics Service. At the time of data collection, which was performed by one of the nurses involved in this research, the relevance of the study was explained, when the participation of the patient was requested. The questionnaire was administered after completion of a rest period of 6 hours for patients undergoing procedures via femoral artery, and of 3 hours for patients undergoing procedures via radial access.

The following independent variables – sociodemographic, clinical and procedure-related – were investigated. The dependent variables were: back pain, urinary difficulty, difficulty in walking, embarrassment, hematoma, bruising, discomfort, bleeding, nausea and vomiting. The pain at the puncture site was assessed as

the fifth vital sign, noting the intensity through the use of a linear pain scale for comparison between groups (zero meaning total absence of pain; 1-3, pain of low intensity; 4-6, pain of moderate intensity; 7-9, pain of strong intensity, and 10, a excruciating pain).² Vascular complications such as hematoma, bruising and slight bleeding were considered according to the literature.⁶ Urinary difficulty was assessed as a deficit or inability to urinate during the rest.

The data were analyzed using the Statistical Package for Social Science (SPSS) program, version 14.0. Continuous variables were described as mean \pm standard deviation. Categorical variables were described as absolute (n) and relative (%) frequencies. To compare means among variables with normal distribution, the t test was used; and to compare categorical variables, the chi-squared test was used. We considered as statistically significant a *p*-value < 0.05 .

This study was approved by the Ethics and Research Committee, Instituto de Cardiologia do Rio Grande do Sul, under number 4246/08. For their inclusion in the study, all patients signed the Term of Free and Informed Consent.

RESULTS

Of the 232 patients considered for the protocol, 4 were excluded from analysis due to the occurrence of ischemic stroke, bradycardia, hypotension and allergic reaction. Thus, 228 patients were evaluated, and of these, 205 underwent the procedure via femoral approach, and 23 via radial access. In all patients, a 6 F arterial sheath was used. The mean age of the participants was 60.0 ± 11.5 years, and most (50.4 %) were male. Other features evaluated can be seen in Table 1.

Of the total sample of patients, 70 (30.7 %) had previously a cardiac catheterization performed, 33 (14.5%) percutaneous coronary intervention and 11 (4.8%) coronary artery bypass grafting.

On a scale of zero to 10, the mean value attributed by patients to the intensity of low back pain was 5.0 ± 4.2 and 1.5 ± 2.7 for pain at the puncture site. Patients who underwent the procedure by radial approach reported having more pain at the puncture site than those who used the femoral artery (26.8 % vs. 52.2 %; *p* = 0.01). However, patients approached via the femoral artery reported more often back pain (69.8 % vs. 30.4 %; *p* < 0.01) and a generalized malaise (34.6 % vs. 8.7 %; *p* = 0.01). These data are shown in Table 2.

The mean size of hematomata and bruising was 2.3 ± 1.0 cm and 2.3 ± 0.5 cm, respectively.

Other discomfort perceived by patients was reported, in addition to those inquired by researchers. The most commonly cited by patients were dyspnea

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