Hand warts among butchers in a supermarket in São Paulo

Verrugas em mãos de açougueiros de um supermercado da cidade de São Paulo

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ABSTRACT | Background: Butchers are exposed to biological hazards as a function of their continuous handling of meat containing blood, fat and fluids. Biological hazards include contamination with viruses, such as the papillomavirus (HPV), especially HPV type 7, which is associated with the so-called “butcher’s wart.” Objective: To investigate wart-like lesions among meat handlers. Method: Cross-sectional descriptive study conducted at a supermarket in São Paulo in 2017. Twenty-four employees allocated to the meat handling section were interviewed and subjected to skin visual examination; lesions were photographed. Results: Most participants were male (87.5%) and half of them (50.0%) were within age range 31 to 40 years old. Only one employee had started working in this section less than 2 years earlier. Wart-like lesions or scars with black dots on their center were found on the hands of 11 butchers (45.8%). Conclusion: Almost half of the participants had history of hand warts. Most of the participants with lesions were male, aged up to 40, right-handed and had worked as meat handlers for 2 years at least. We might infer we found cases of wart-like occupational dermatosis among butchers at a supermarket in São Paulo.

Keywords | warts; containment of biohazards; dermatosis, occupational; food handling; HPV, human papillomavirus viruses.

RESUMO | Introdução: A profissão de açougueiro é descrita como exposta a agentes de risco biológico, devido à manipulação constante de carne com sangue, gorduras e fluidos. Entre os riscos biológicos, podemos encontrar contaminação por agentes virais como o papilomavírus (HPV), mais predominantemente o HPV de subtipo 7, caracterizado como “verruga do açougueiro”. Objetivo: O objetivo do estudo é avaliar a presença de lesões verrucosas em trabalhadores do setor de açougue. Método: Este estudo transversal descriptivo foi realizado em um supermercado na cidade de São Paulo durante o ano de 2017. Participaram 24 trabalhadores do setor de açougue: todos responderam a uma entrevista e foram submetidos à inspeção da pele, e as lesões encontradas foram documentadas por foto. Resultados: A maioria dos participantes é homem (87,5%) e metade deles (50,0%) estava na faixa etária de 31 a 40 anos. Apenas um funcionário iniciou no setor há menos de dois anos (4,2%). Lesões como verrugas ou cicatrices de lesões com ponto preto em região central foram encontradas nas mãos de 11 açougueiros (45,8%). Conclusão: Quase metade dos participantes apresentavam sinais de história de verrugas em mãos. O grupo de lesionados tinha maioria do sexo masculino, idade até 40 anos, eram destros e trabalhavam no açougue há pelo menos dois anos. Podemos sugerir que foram detectados casos de dermatoses ocupacionais de verrugas em trabalhadores no açougue de supermercado na cidade de São Paulo.

Palavras-chave | verrugas; risco biológico; dermatose ocupacional; manipulação de alimentos; HPV.
INTRODUCTION

Butcher shops are highly relevant to the Brazilian economy. There are about 55,000 such shops, which generate BRL 1.6 billions per year. Butchers are exposed to biological hazards as a result of their continuous handling of meat containing blood, fat and fluids remaining after processing, which must be duly prepared before it can be displayed for sale. Butcher shops are also a relevant source of zoonoses, i.e., diseases transmitted from animals to humans. Contamination with biological agents (mainly bacteria, fungi and viruses) might occur through contaminated objects, blood and meat, as well as through accidents involving sharps, cutters, mincers and package sealers, which also expose workers to accidents.

Among the biological hazards, contamination might be due to viruses, such as the papillomavirus (HPV), especially HPV type 7, which causes the so-called “butcher’s wart”. Studies conducted in England showed that HPV type 7 is commonly found among butchers and other meat handlers.

HPV causes epithelial or mucosal lesions in both men and women, characterized by limited growth and spontaneous regression by virtue of the action of the immune system. Warts are firm papules or nodules with hard / keratotic surface. They occur more frequently on the back of the hands and fingers, on the nail bed or nailfold, which makes treatment more difficult.

Identifying lesions on the hands of butchers is crucial for the establishment of their occupational link to implement the necessary hygienic-sanitary measures. Although lesions have been described for decades, there are few records of warts among butchers in Brazil. For this reason, documenting such findings might contribute to improve the health of this population of workers.

The aim of the present study was to investigate the occurrence of warts among meat handlers in a supermarket in São Paulo, São Paulo, Brazil.

METHOD

The present cross-sectional descriptive study was conducted at a supermarket in São Paulo in 2017. The analyzed company has 411 employees, 26 of them allocated to the meat handling section (6.3%). The workers were invited to participate in the study upon attending their periodic health examination, and 24 (92.3%) were included.

The participants were interviewed to collect sociodemographic data, signs and symptoms, and information on their current job. Skin inspection was performed, and lesions were photographed. As warts were considered all wart-like papules or cauliflower-like lesions on the dorsal, palmar and periungual areas of the hands and fingers. Also circumscribed skin lesions with desquamation on the margins and thrombosed vessels on their center (“black dots”) compatible with warts in regression induced by treatment were included.

The study was approved by the research ethics committee of the Holy House of Mercy Brotherhood of São Paulo (Certificate of Presentation for Ethical Appraisal—CAAE 79768817.0.0000.5479/2017).

RESULTS

The butchers’ work begins with the arrival of the meat at night. The meat is taken to and stored in a cold chamber. Next it is cut by the butchers and put for display in glass sales counters by the salespeople. The meat might also be weighed, packed and covered with plastic, and then in refrigerators to facilitate their purchase. The same process is applied to beef, chicken and pork. The working time is 8 hours per day, with one hour for lunch, 20 minutes for coffee breaks, six days a week. The employees receive steel mesh gloves to protect their hands from cuts and contusion.

Most participants were male (87.5%); half of them were within age range 31 to 40 years old. One single employee (4.2%) had started working in the meat handling section less than 2 years earlier. Wart-like lesions or scars with a central black dot were detected on the hands of 11 butchers (45.8%) (Table 1). All of them reported having had topical treatment with salicylic and lactic acids.

Most of the butchers with warts were male (81.8%), however, the relative frequency of lesions was higher among the women (66.6%). Similarly, while most participants were right-handed (81.8%), all the left-handed butchers...
exhibited lesions. Bilateral lesions were found in two right-handed butchers. All the participants with lesions had worked at the meat handling section for 2 years at least (Table 1). Lesions and their characteristics are depicted in Figures 1 to 4.

DISCUSSION

Occupational dermatoses are the most frequent category of occupational diseases\textsuperscript{11,12}. They are characterized as “any change in the skin, mucous membrane or adnexa direct or indirectly caused, conditioned, sustained or aggravated by anything used during professional activities or present in the work environment”\textsuperscript{13}. However, assessing these conditions is difficult, because most patients do not see specialists, but self-medicate or seek treatment at the employers’ outpatient facilities\textsuperscript{14}.

Some of the main risk factors for dermatoses are indirect and individual, such as age, sex, ethnicity, medical history, family history, local weather, lifestyle and hygiene habits\textsuperscript{14,15}. Direct factors which might cause or aggravate skin lesions are chemical, physical, biological or mechanic agents which directly act on the exposed worker’s skin\textsuperscript{15,16}. Butchers are exposed to physical (e.g., cold and humidity), biological (e.g., HPV 7) and mechanical (microtrauma) agents, in addition to cuts while handling tools\textsuperscript{2,15,16}. HPV is the biological agent most frequently found among workers who have direct contact with infected animals, such as butchers and meat handlers\textsuperscript{14}.

The prevalence of warts among the employees at the analyzed supermarket was slightly lower compared to a French slaughterhouse (49.2%)\textsuperscript{17}. Diagnosis is established based on dermatological examination and polymerase chain reaction (PCR)\textsuperscript{5}. International studies detected HPV types 1, 2, 3, 4 and 7 on the hands of butchers\textsuperscript{4,17}. In the present study conducted in Brazil we did not perform laboratory tests to confirm infection with HPV.

Table 1. Distribution of supermarket meat handlers according to presence or not of warts and covariables. São Paulo, 2017 (n=24).

<table>
<thead>
<tr>
<th></th>
<th>Lesion yes (%)</th>
<th>Lesion no (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9 (81.8)</td>
<td>12 (92.3)</td>
<td>21 (87.5)</td>
</tr>
<tr>
<td>Female</td>
<td>2 (18.2)</td>
<td>1 (7.7)</td>
<td>3 (12.5)</td>
</tr>
<tr>
<td><strong>Age range</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>21-30</td>
<td>4 (36.4)</td>
<td>3 (23.1)</td>
<td>7 (29.2)</td>
</tr>
<tr>
<td>31-40</td>
<td>4 (36.4)</td>
<td>8 (61.5)</td>
<td>12 (50.0)</td>
</tr>
<tr>
<td>Over 40</td>
<td>3 (27.2)</td>
<td>2 (15.4)</td>
<td>5 (20.8)</td>
</tr>
<tr>
<td><strong>Dominant hand</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td>9 (81.8)</td>
<td>13 (100.0)</td>
<td>22 (91.7)</td>
</tr>
<tr>
<td>Left</td>
<td>2 (18.2)</td>
<td>0</td>
<td>2 (8.3)</td>
</tr>
<tr>
<td><strong>Length in the job</strong></td>
<td></td>
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<tr>
<td>Up to 2 years</td>
<td>0</td>
<td>1 (7.7)</td>
<td>1 (4.2)</td>
</tr>
<tr>
<td>More than 2 years</td>
<td>11 (100.0)</td>
<td>12 (92.3)</td>
<td>23 (95.8)</td>
</tr>
</tbody>
</table>

Figure 1. Male employee, 48 years old, 4 years working as butcher. Multiple flat and hyperkeratotic lesions on the left palm, with a thrombosed blood vessel on the center of lesions. On the second finger, flat hyperkeratotic lesion and hardened keratotic papule-like lesion.
There is not a consensus on the length of exposure that favors the occurrence of lesions. Some authors reported a relationship with occupational history of continuous contact with beef for two years at least. There is a report from Germany of warts by HPV 7 without history of meat handling over a long period of time. In the present study, all the participants with lesions had handled meat for two years at least.

One further relevant finding is that the analyzed supermarket did not comply with the legislation on good food handling practices formulated by the Brazilian National Health Surveillance Agency (ANVISA). According to ANVISA Collegiate Board Resolution (RDC) no. 216/2004, food handling workers with lesions or symptoms of diseases likely to interfere with the sanitary quality or hygiene of food should be kept off the job as long as their clinical condition is incompatible with food handling tasks. The municipal sanitary regulations of São Paulo recommend workers with cuts or other lesions to have them covered with dressings and to wear waterproof protective equipment, such as impermeable fingerstalls or gloves. Adherence to the legislation in force was poor at the analyzed supermarket.

As limitations, the results of the present study cannot be generalized to other settings, as we analyzed one single supermarket chain unit. While the lesions found were compatible with warts, all of them were in stage of regression after treatment. As the histopathological analysis could not be performed, it is not possible to conclude that the lesion were caused by HPV 7. Finally, we did not analyze other aspects of the clinical history of the participants, nor occurrence of similar lesions among employees allocated to other supermarket sections.

**Figure 2.** Male employee, 27 years old, 3 years working as butcher. Two hardened, keratotic papule-like lesions on the right palm, with desquamating margins and thrombosed blood vessel on their center.

**Figure 3.** Male employee, 32 years old, 12 years working as butcher. Hardened, hyperkeratotic papule-like lesion on the back of the second finger and thrombosed blood vessels on its center.
CONCLUSION

The prevalence of hand warts was higher among the men, employees aged up to 40, right-handed and having worked at the meat handling section for two years at least. Hand lesions were found among employees who share working tools, which could be the source of virus propagation. Therefore, further studies should establish whether indirect contact is a factor for virus transmission.

Based on the epidemiology of lesions and biological plausibility, we might infer we detected cases of wart-like occupational dermatoses among meat handlers at a supermarket in São Paulo. Since the Brazilian legislation recommends reporting suspected cases of work-related health problems, the employer ought to promote an investigation of their etiology and causal link. An outbreak of cases in the area could contribute to increase the frequency of it, however it wouldn’t necessarily be spread through the work environment.

Clinical evaluation and safety procedures should be reviewed and adjusted to ensure hygienic-sanitary conditions adequate to protect workers against infection of HPV in the workplace and avoid the contamination of the food sold. Actions to prevent skin disorders and promote skin health among meat handlers might be included in the Occupational Health Medical Control Program to improve the quality of life and well-being of this population of workers and reduce the risk of restrictions to their job.

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REFERENCES


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