

CLINICAL PATHOLOGY OF ART PHOTOGRAPHERS: A COMPREHENSIVE REVIEW OF A RARE DISEASE CAUSED BY SEVERAL PROFESSIONAL HEALTH HAZARDS

PATOLOGIA CLINICĂ A FOTOGRAFILOR DE ARTĂ: O ANALIZĂ CUPRINZĂTOARE A UNEI BOLI RARE CAUZATE DE MAI MULTE PERICOLE PROFESIONALE PENTRU SĂNĂTATE

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Abstract:

Professional health hazards are an important topic for healthcare providers, even in this period when emphasis is put on fighting pollution and mental diseases. In this context, a category of visual artists presents also their professional medical conditions. Although not severe in most cases, clinical conditions of visual artists are quite common, but scarcely reported. These pathological conditions may be considered as rare diseases, given their low prevalence in the general population, but are none less important. This paper reviews updated knowledge on health hazards affecting art photographers. Art photography is in continuous development and people at risk become more numerous. Diseases linked to professional activity of photographers involve several diseases: skin diseases caused by chemical or allergic interaction, visual disorders and psychological disorders. Preventive measures are suggested: photographers should avoid prolonged contact with offensive agents and if necessary use protection equipment; if necessary, they should follow recommendations to prevent health hazards of artistic photography; when needed, relaxation techniques should be learned and practiced. This is to our knowledge one of the very few reviews of this topic.

Rezumat:

Pericolele profesionale pentru sănătate sunt un subiect important pentru furnizorii de servicii medicale, chiar și în această perioadă în care se pune accent pe combaterea poluării și a bolilor mentale. Deși nu sunt severe în majoritatea cazurilor, manifestările clinice ale artiștilor vizuali sunt destul de frecvente, dar abia raportate. Aceste manifestări patologice pot fi considerate boli rare, având în vedere prevalența lor scăzută în populația generală, dar nu sunt cu atât mai puțin importante. Această lucrare trece în revistă cunoștințele actualizate privind pericolele pentru sănătate care afectează fotografiile de artă. Fotografia de artă este în continuă dezvoltare, iar persoanele cu risc devin mai numeroase. Bolile legate de activitatea profesională a fotografiilor implică mai multe afecțiuni: boli ale pielii cauzate de interacțiuni chimice sau alergice, tulburări vizuale și tulburări psihologice. Se sugerează măsuri preventive: fotografiile ar trebui să evite contactul prelungit cu agenți ofensatori și, dacă este necesar, să utilizeze echipamente de protecție; dacă este necesar, aceștia ar trebui să respecte recomandările pentru a preveni pericolele pentru sănătate ale fotografiilor artistice; atunci când este necesar, tehnicile de relaxare trebuie învățate și practicate. Din cunoștințele noastre, aceasta este una dintre puținele recenzii la acest subiect.

Key-words: *health hazard, occupational medicine, photography, professional hazard, SARS-cov-2, visual art*

Cuvinte cheie: *pericol pentru sănătate, medicina muncii, fotografie, pericol profesional, SARS-cov-2, artă vizuală*

Introduction

Photography was discovered about 200 years ago (Rosenblum and Stoll, 2019) and soon was considered a new art (Ang, 2019). At the

beginning photography was performed by the inventors themselves, but by the middle of the 19th century photography became really popular (Magurean, 2020). In the 20th century it was

performed by almost everybody, however an elite group of professional photographers evolved developing the photography up to the level of art (Allbeson, 2020). Art photography is now one of the most beloved forms of artistic expression. The advent of artificial intelligence may represent a challenge for art photographers. In the future this profession might suffer transformations.

This is well reflected on the art market and by the interest of collectors and museums for important art photographers (Wang, 2015). Although not many things to possible health hazards of professional art photographers, this vocation is implicating a real health risk to develop different diseases. They are presented in this review. We present here an update on the pathology linked to the profession of photographic artist.

Photography and medicine

The connection between art and medicine relies not only on the pathology of the professional photographers. It has in common also the contribution of photography to the development of health sciences and to the documentation of pathology. Indeed, soon after its discovery, photography was used to record pathological cases (Tian et al., 2020, Hanlon, 2018). With the advent of roentgenography, the role of photography increased. In the digital era one cannot conceive medicine without image documentation based on photography (Spear and Hagan, 2008). The medical photography may have not only scientific significance but also an artistic value, because it is able to show aspects from the micro- or macro universe, displaying images that we cannot see with the free eye (Taheri et al., 2013).

These medical photographs are taken by professional photographers or by genuine scientists using their cameras or the microscope or the objectives of sky observers, etc. Most of this kind of photographic illustrations are carried out occasionally and do not expose to professional risks. However, daily use of photography without digital techniques exposes the photographer to professional diseases. This pathology should be differentiated from pathology of other nature in professional health-care workers using frequently photography. It is

well known that in forensic medicine, a disease where physicians are exposed to multiple physical, chemical and mental risks, the photography is frequently used to record the forensic cases (Henham and Lee, 1994). Therefore legist physicians using photography may be exposed to professional hazards as other professional photographers.

Health hazards for professional photographers

The potential clinical risks in professional photographers represent a reality (Rosenthal and Forst, 2001). The staffs who are most exposed to vocational risk are the photographic artists and professional photographers, i.e. frequent users of photography long time in contact with chemical reagents.

The switch from analogical to digital photography was accompanied by a change in professional pathology: fewer conditions caused by exposure to chemical agents and more psychological disturbances linked to the compulsive behavior facilitated by adherence to digital photo devices.

The interest of the physician for photography-associated diseases is dating back before the digital era (Marlenga and Parker-Conrad, 1993). In the seminal and ancient paper by Marlenga and Conrad-Parker, 1993 it was concluded that:

- i. Artists use many materials composed of the same chemicals that cause major occupational health problems in industry;
- ii. The majority of artists are unaware of the potential hazards in the materials and processes they use;
- iii. The pilot study revealed that greater than 90% of the amateur photographers did not use safety precautions in the darkroom;
- iv. The most common perceived barrier to the use of safety measures was missing knowledge about chemical safety (Marlenga and Parker-Conrad, 1993).

The risk factors causing medical pathology in professional and art photographers are listed in table 1.

Analogical photography
Chemical agents: contact
Chemical agents: ingested
Vapors, gas: inhaled
Prolonged orthostatic position: musculoskeletal
Prolonged used of the sight: ocular
Dark room: ocular
Digital photography
Obsessive troubles linked to the wish to possess competitive photographic equipments
Addiction to work (workaholism) and addiction to substances (alcohol, narcotics)

Table I: Risk factors in professional and art photographers

These factors are important because the photographer should be aware of them and try to prevent them (Shaw and Rossol, 1991).

Physicians have to distinguish between medical conditions in photographers cause by photography itself from medical conditions common to different artists (Zuskin et al., 2007). Indeed, different noxious agents affect visual artist in general, not only the photographers. Although modern techniques are designed to reduce risks, there are remaining hazards due to physical activity linked to creation, to mental conditions associated to creative processes, chemical agents, physical conditions like dark rooms, high temperature, noxious materials, etc. Thus, health hazards are numerous and visual artists are at risk, given a common level of exposure typical for them, plus particular aggressive agents encountered by photographic artists (Kipen and Lerman, 1986).

In an Indian study involving 100 professional photographers, mainly males, a prevalence of skin disease of 37% was reported. From these, majority was contact dermatitis (one quarter of subjects) and few cases presented leukoderma and nail hyperpigmentation (Attarchi et al., 2009).

Moments where exposure is major are: developing bath and fixing bath. Working in a nonventilated room is dangerous in acute and chronic exposure.

Following are the chemical products able to affect the art photographers and in general professional photographers: formaldehyde, lead,

acids, oxalates, acetic acid, sulfur dioxide, dichromates, hydrochloric acid, selenium, hydrogen sulfide, uranium nitrate, gold salts, platinum salts, sodium hypochromite, sodium sulfate, sodium thiosulfate, cyanide, oxalate, hydroquinone, alkali, ammonia (Zuskin et al., 2007). All these are used in different photographic procedures of analogic photography, still used by visual artists.

Given the high prevalence of dermatological diseases in photographers, preventive measures are mandatory. This is including the health education of photographers on risks incumbent from the manipulation of chemicals in photo laboratories or studios.

One case report

Here is a representative case report of health hazard in an art photographer.

Male, 56 years, professional photographer, professor of photography at a visual art high education institution, using different photographic techniques for several years, starts complaining of digital itching. The itching was present to both hands and impeded the manual activities of the photographer. No alimentary or drug factor could be taken into consideration. An allergology consultation with clinical and prick test was negative for any common tested potential allergens. The itching aggravated and caused itching scars. A dermatological exam was requested, and eczema was ruled out. Physicians asked about potential contact with chemical factors linked to his profession, but the patient denied any connection and claimed that he works with the chemical materials for decades. Antihistaminic therapy and local anti-pruriginous therapy were recommended and followed by the physician with minor effects. However, itching disappeared when the patient quit work, i.e. his photo laboratory for summer holidays. Back after six weeks to work, the itching which disappeared meanwhile occurred again. In this case an easy diagnosis of contact dermatitis caused by chemical reagents was established. The reagent was a photographic developer. The patient was advised to use gloves while working with the developer. Skin lesions disappeared soon without any other therapy.

Professional photographers should be aware of their professional hazards and avoid

direct contact with reagents able to cause skin lesions.

The skin diseases in photographers deserve more attention from the physicians, as reported in an Indian survey (Attarchi et al., 2009).

Occupational pathology of professional art photographers

People who work as photographers for long time, i.e., professional photographers including art photographers run the risk to be exposed to different hazards: chemical, physical, psychological (Rosenthal and Forst, 2001). Beside this, specific differences may evolve from the specific job: mode photographers are exposed to harassment and abuse accusations; newspaper photographers mainly deployed on battle fields run several physical risks including injuries or traumatic death. Working in orthostatic position or manipulating heavy photographic equipment include the risk of musculoskeletal injuries, back pain, venous insufficiency etc. The work in a darkroom is associated with exposure to chemical agents (see table 1).

The advent of digital photography diminished the risk for amateur photographer and replaced them with psychological disorders and accidental injuries and even deaths due to "selfie" photographs recorded in dangerous positions or locations (Gioia et al., 2020, Cuculic and Sosa, 2019, Bansal et al., 2018, Jain and Mavani, 2017). Indeed, the generalization of the availability of digital cameras and the vogue of "selfies" have generated numerous fatal accidents.

However, for professional artists, old style photography did not vanish, visual artists make efforts to maintain and use old photographic techniques involving noxious chemical agents.

The spectrum of diseases caused by occupational hazards in professional art photographers are displayed in table 2.

It is obvious that mainly chemical exposure represents the main cause of this pathology (Shaw and Rossol, 1991).

Occupational diseases	Example
Skin diseases	urticaria, eczema
Respiratory diseases	bronchial asthma, allergic or chemical rhinitis
Gastrointestinal diseases	nausea, vomitus
Sight diseases	acuity loss
Musculoskeletal diseases	pathological prolonged position, back pain, activation of osteoarthritis
Mental diseases	depression, hypomania, addictions

Table II. Occupational diseases in professional art photographers

Skin diseases

Dermatological involvement in professional photographers and mainly in photography artists is well known (Peate, 2002, Brancaccio et al., 1993, Schoel et al., 1991, Lidén, 1986). The factors are represented by direct and unprotected contact with chemical reagents used in developers or fixing agents. Thus, phenylendiamine is causing lichen planus, acid or alkaline reagents cause dermatitis, hydroquinone causes leukoderma (Attarchi et al., 2009).

Respiratory diseases

The respiratory system involvement occurs in photographers because of inhalation of chemical agents in closed rooms with poor ventilation like the classical dark room. Of course, nowadays, this respiratory disease including cough, and dyspnea caused by chemical irritative bronchitis and pneumonitis (Rosenthal and Forst, 2001).

Gastrointestinal diseases

The digestive disorders are due to accidental ingestion of chemical reagents (developers) and less commonly because of nonhygienic manipulation of these reagents. The symptoms are nonspecific and only a good history of the case can help in identifying the etiology of the gastrointestinal condition (dyspepsia, diarrhea). The visual artists

performing non-digital prints of their work, may be at risk for digestive neoplasia caused by chemical reagents involved in printing: esophageal, gastric cancer (Zuskin et al., 2007).

Sight diseases

Sight is the most important sense in visual artists (Ravin, 1985). Its damage leads to severe handicap. Photography is a challenge for sight and may lead to refraction problems. Beside this, contact with chemical substances may cause conjunctivitis or blepharitis.

Beside this, the ophthalmological pathology has the most dramatic impact in this profession. Indeed, ocular pathology disables the artist and her/his capacity to perceive the world. This disability has severe psychological consequences (Ravin, 2008).

Therefore, ophthalmological exams are important for prevention and early detection of ocular pathology linked to profession but also to degenerative changes linked to ageing (Ravin, 2008).

Musculoskeletal diseases

Recording pictures may sometimes be physically challenging i.e. for photographs taken from the air or under sea, recording animals or flowers, etc. Orthostatism may cause back pain and neurological complications. Musculoskeletal complaints are common in professionals using their musculoskeletal system (Mobasher and Batt, 2016, Lietz et al., 2018). This issue represents nowadays a real problem (Lewis et al., 2019) requiring general awareness and intervention.

Mental diseases

Creativity is sometimes attributed or associated with mental health issues in visual artists and is may be sometimes linked to creativity. Numerous examples of psychiatric disorders have been described in visual artists and photographers might not escape to this relation (Zuskin et al., 2007, Behen and Anable, 1998). Thus, like other visual artists, art photographers may have emotional or psychiatric disorders, sometimes linked to creativity. Some have periods of hypomaniacal hyperactivity, others have sleep disturbances. Drug addiction and alcoholism is frequent

among visual artists including photographers (Zuskin et al., 2007).

Another category is encountered in amateur photographers who are obsessed by the photographic equipment: having the best objective, the newest type of camera etc. Vishneski, 2019 is joking when he describes and classifies these compulsive disorders as following syndromes typical for freaks of photographic equipment: GAS: Gear Acquisition Syndrome; LBA: Lens Buying Addiction; PFA: Photo Forum Addiction and TUB: The Upgrade Beast (Vishnevski, 2019).

Management of diseases in professional art photographers

The hazards of the occupation of art photographers are real (Lesser and Weiss, 1995). This is not an easy profession as apparently, but is a vocation including some health hazards. Therefore, the medical conditions linked to occupational hazards of photography should be well managed. The pathological conditions are quite rare but include a spectrum of pathogenic links which should always be considered.

Prevention is the first step: artists who prefer classical photographic techniques to the contemporary digital photo are required to use gloves and glasses to avoid skin or mucosa contacts: they should work in ventilated rooms to avoid inhalation or ingestion of contaminants.

Relaxation is important to preserve mental health and physical fitness.

Once diseases occur, pathogenic and symptomatic therapy should be introduced. Therefore, the management of the cases of pathology occurring in visual artists performing photography have to be managed in collaboration with the specialists: toxicologist, allergist, orthopedist, ophthalmologist, psychiatrist. Rehabilitation facilities should be offered to these patients.

Professional pathology of photographers during COVID-19 pandemic

The recent SARS-Cov-2 infection with the pandemic of COVID-19 has affected also the visual artists including photographers. They also had to respect the physical distance regulations, self-isolation, reduce external

contacts, etc. This has brought together economic consequences for artists and gallerists, leading a new psychosocial factor beside the general medical and social consequences of the pandemics (Sun et al., 2020, Ivbijaro et al., 2020). Not only the exposure to the infectious agent SARS-Cov-2 is harmful, involving similar life and health risks as the general population, but also the psychosocial factors associated to the effects of the pandemic, affecting the visual artists who are more sensitive.

Beside this, the visual artists were involved in the artistic representation of the COVID-19 disease, determining the social representation of the contagious risk and its humorous mass-media reflection (Callender et al., 2020).

In conclusion, one can assume that professional art photographers using analogical techniques of photography present different health hazards. These are mainly caused by chemical materials in contact, inhaled or ingested during work. In art photographers using both analogue and digital photography, physical and psychological exhaustion may be encountered as occupational disease. The clinical conditions caused by the chemical substances require appropriate management, starting with the prevention. The psychological and mental health issues require also specialized management. The Sars-Cov-2 pandemic has deleterious effects on this professional category.

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Acknowledgment: not applicable

Funding: no funding

Availability of data and materials: not applicable

Authors' contribution: IDM had the idea of this paper, searched literature, contributed to the writing of the text. DID contributed essentially with literature search, medical analysis of the information, contributed to the writing and revised the manuscript. Both authors read and approved the final version of the manuscript.

Ethics approval and consent to participate: not applicable

Patient consent for publication: not applicable

Competing interests: nothing to declare