

Clinical-surgical dermatology: assessment of the changes in types of procedures performed in a dermatologic residency in the Brazilian State of Paraná

Dermatologia clínico-cirúrgica: avaliação da mudança no perfil dos procedimentos de um serviço de residência médica no Paraná-BR

ABSTRACT

Introduction: During the last four decades, dermatology has evolved from a purely clinic into a clinical-surgical specialty. In addition to diagnosing conditions and conducting clinical therapies, dermatologists began performing surgical treatments of cutaneous affections and neoplasias, corrections of scars, and cosmetic cutaneous procedures.

Objective: To describe the change in types of procedures performed at the Dermatology Service of the Clinical Hospital of the Federal University of Paraná during the period studied.

Material and methods: A systematic review of the Dermatology Service's proprietary registers, and of additional data supplied by the hospital's Statistics and Planning System, was carried out for the period ranging from 2002 to 2007.

Results: A relative increase of 16% in the number of surgical procedures has been verified in the study period, with an increase in the complexity of the procedures – with the ratio of excisions of benign lesions/ malignant tumors falling to 1.04:1 in 2007, from 2.25:1 in 2002. Among cosmetic procedures there has been a 74% increase in the application of chemical peels during this time. The use of fillers and botulinum toxin evolved from sporadic procedures in 2002 to frequent practice in 2007, with 3.33 and 3 procedures being conducted per month, respectively.

Conclusions: The data, which were obtained objectively, demonstrate the transformation of the activities of the Dermatology Service of the Clinical Hospital of the Federal University of Paraná from mainly clinical to clinical-surgical procedures, with an increase in the complexity of the procedures performed to help train dermatology residents, in accordance with the development of the specialty throughout Brazil and the rest of the world.

Keywords: ambulatory surgical procedures; dermatology; historical article.

RESUMO

Introdução: Nas últimas quatro décadas a dermatologia transformou-se, de especialidade puramente clínica, em especialidade clinicocirúrgica. O dermatologista passou a realizar, além da diagnose e do tratamento clínico, o tratamento cirúrgico das afecções e neoplasias cutâneas, a correção de cicatrizes e procedimentos cutâneos necessários para melhora da aparência individual.

Objetivo: Demonstrar a mudança do perfil das atividades do Serviço de Dermatologia do HC-UFPR no período estudado.

Material e métodos: Foi realizada a revisão sistemática dos registros próprios do Ambulatório de Dermatologia, além dos dados fornecidos pelo Sistema de Estatística e Planejamento do HC-UFPR entre 2002 e 2007.

Resultados: Houve aumento relativo de 16% no número de procedimentos cirúrgicos no período estudado, com aumento também de sua complexidade, passando o índice de exereses de lesões benignas em relação ao da exereses de tumores malignos de 2,25:1 em 2002 para 1,04:1 em 2007. Quanto aos procedimentos cosméticos, a realização de peelings ampliou-se 74% no período estudado. O preenchimento e a aplicação de toxina botulínica passaram de procedimentos esporádicos em 2002 para procedimentos de rotina, com 3,33 preenchimentos/mês e três aplicações toxina/mês.

Conclusões: Os dados obtidos demonstram objetivamente a transformação das atividades do Serviço de Dermatologia do HC-UFPR, de principalmente clínicas, para clinicocirúrgicas, com aumento da complexidade dos procedimentos realizados no treinamento do residente de dermatologia, em concordância com a evolução da especialidade no Brasil e no mundo.

Palavras-chave: procedimentos cirúrgicos ambulatoriais; dermatologia; artigo histórico.

Original Article

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INTRODUCTION

During the past four decades, dermatology has evolved from a purely clinical into a clinical-surgical specialty¹. In addition to diagnosis and clinical treatments, dermatologists have started to perform surgical treatments of skin affections and neoplasias, correction of scars, and cosmetic cutaneous procedures.

Dermatology has developed as a clinical speciality associated with internal medicine. With the increase in the number and diversity of surgical procedures performed by dermatologists, basic surgical training has become an essential component of dermatologic training, included in the core curriculum for residents.² In fact, some dermatology departments already offer the option of an additional residency year focusing on dermatologic surgery.

According to the Medical Residency in Dermatology program proposed by the Brazilian Society of Dermatology to the National Commission of Medical Residency in February 2010, the hours devoted to the surgical aspect of dermatology should increase progressively. Dermatologic surgery would constitute 10% of the annual workload in the first year of residency (R1), 20% in the second year (R2), and 40% in the third (R3) – with 20% dedicated to dermatologic surgery and 20% to invasive cosmiatry. The objective of this study was to analyze the number of surgical procedures classified into three categories: procedures conducted in the office, outpatient surgical procedures, and cosmetic procedures in order to assess the change in the types of procedures performed at the Dermatology Service of the Clinical Hospital of the Federal University of Paraná (HC-UFPR). The numbers demonstrated a shift from mainly clinical to clinical-surgical procedures, in accordance with the development of the dermatologic surgery specialty throughout Brazil and the rest of the world.

METHODS

A retrospective study was conducted to analyze the absolute numbers of clinical visits and outpatient surgical procedures at the HC-UFPR's Dermatology Service from January 2002 to December 2007. These visits are not representative of the types of procedures requested by patients. Rather, they are a sample of the learning activities of the residents. The demand for cosmetic procedures at the clinic is constrained by the cosmetic clinic's capacity and by the relevance of cosmetic procedures for residents' medical training.

The data was collected using HC-UFPR's Hospital Information System and the Dermatology Clinic's proprietary registers and manual ambulatory records that describe the surgical procedures performed. The surgical procedures were classified into three categories: procedures conducted in the office, outpatient surgical procedures, and cosmetic procedures (Table 1).

The procedures conducted in the office included: biopsy, electrosurgery, curettage, cryosurgery, intralesional injections and shave. Outpatient surgical procedures consisted of: excisions with suture (removal of benign or malignant cutaneous lesions through excision and primary closing or using reconstruction with flaps or grafts) and nail surgery (surgical procedures accomplished in the nails and their structures, with a diagnostic or therapeutic objective). The cosmetic procedures included: chemical peeling, cutaneous filling, dermabrasion (removal of the epidermis and superficial dermis

by mechanically sanding the skin), botulinum toxin injections, blepharoplasty, brow lifting, corrective surgery, and subcision.

RESULTS

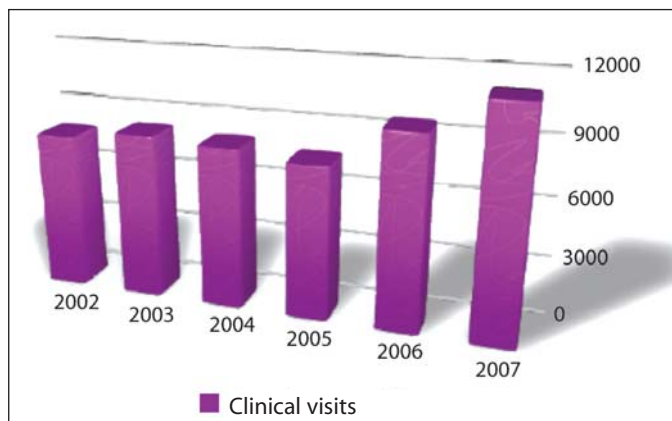
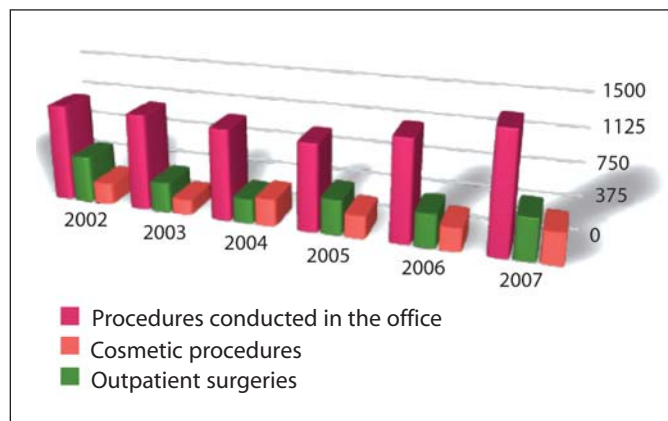
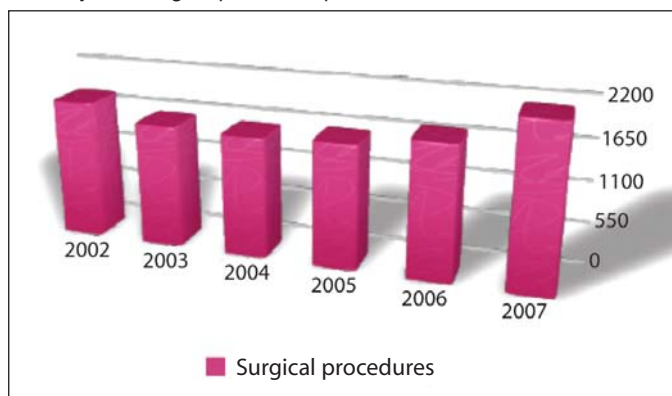
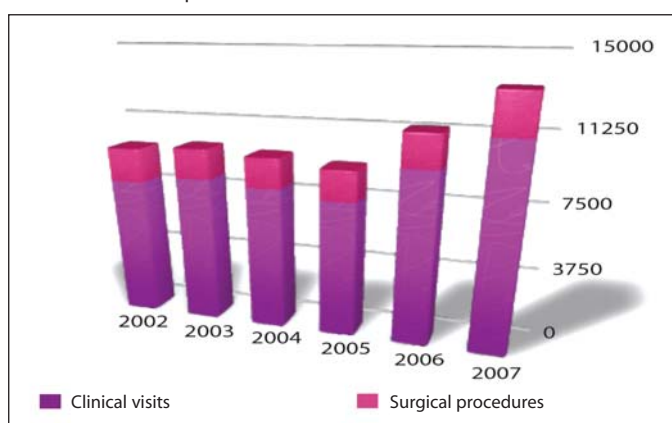
From 2002 to 2007 the number of clinical visits increased from 7,837 to 11,296, representing a relative increase of 144% (Figure 1). During the same period, there was also a 116% increase (from 1,850 to 2,158) in the number (Figures 2, 3 and 4) and complexity (Figures 5 to 7) of surgical procedures. The most frequently performed procedure during this period was THE diagnostic biopY, which progressed increasingly in absolute numbers, in accordance with the increase in the number of clinical visits (Figure 5).

Although the number of outpatient surgical procedures remained stable, a narrowing gap was observed between the number of procedures involving benign lesions – such as excision of cysts, lipomas, nevI and dermatofibromas – and those concerning malignant tumors, with the ratio of surgeries of benign lesions/surgeries of malignant tumors shifting from 225:1 in 2002 to 142:1 in 2005, and 104:1 in 2007 (Figure 6).

The number of cosmetic procedures increased progressively between 2002 and 2007 from 239 to 351 (Figure 7). Chemical peelings were the most frequently performed procedure in each year studied. The application of botulinum toxin

Chart 1 - Types of procedures carried out at the HC-UFPR's Dermatology Clinic

Procedures conducted in the office	Outpatient surgical procedures	Cosmetic procedures
Biopsies	Excision of tumors with suture	Peelings
Electrosurgery	Excision of benign lesions	Cutaneous fillings
	Dermabrasion	Botulinum toxin
Curettages	Nail unit surgery	Blepharoplasty
Cryosurgery		Brow lifting
Intralesional injections		Corrective surgery
Shave		Subcision

Graph 1 - Clinical office consultations conducted between 2002 and 2007**Graph 4 -** Surgical procedures performed between 2002 and 2007**Graph 2 -** Surgical procedures performed between 2002 and 2007**Graph 3 -** Relationship between office visits and surgical procedures performed between 2002 and 2007

and cutaneous fillings represented the greatest increase in number of procedures carried out among the sub-categories in this group. The number of sclerotherapy procedures performed decreased, falling to zero in 2007.

DISCUSSION

The Brazilian Society of Dermatology has accredited most of the medical residency services in Brazil in the 1970s. Since

then it has been possible to notice the constant development of this area of medical expertise, which has evolved from a purely clinical to a clinicalsurgical

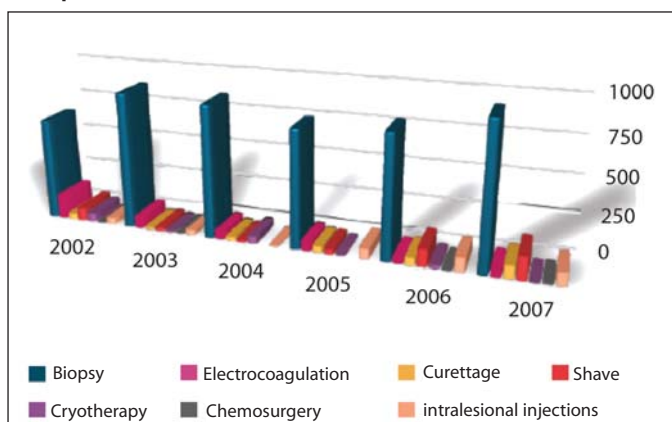
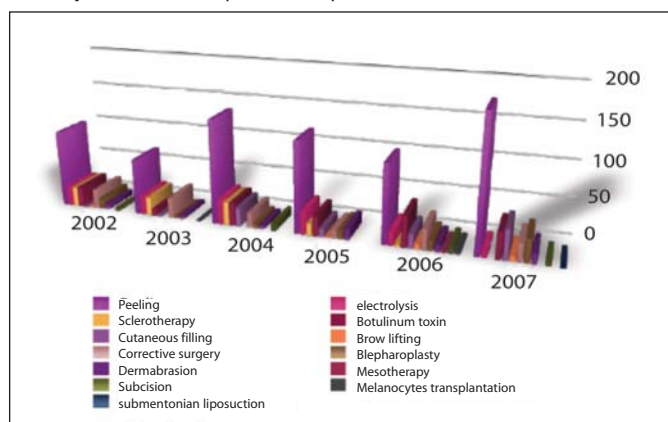
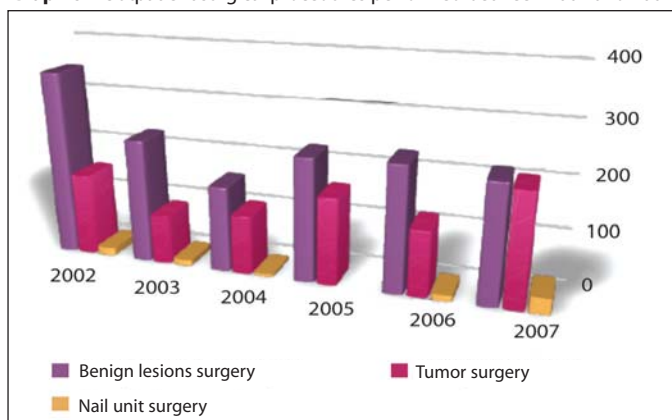
speciality³. Dermatologic surgery is defined as surgical procedures performed in the skin.⁴ The scope of dermatologic surgery covers three major areas: oncological, corrective, and Aesthetic¹. Initially, there was a concern that an increase in dermatologic surgical procedures would lead to a decline in interest in clinical dermatology, or even create a dichotomy between these two areas. Nevertheless, the areas combined and became complementary^{5,6}.

Between 2002 and 2007, there was a progressive increase in clinical visits in the Outpatient Dermatology Clinic at the HCUFPR.

According to a US study conducted by Neville⁷, using data from the National Center for Health Statistics (NCHS), diagnostic biopsies were the most frequently carried out procedure by dermatologists in that country between 1995 and 2001, representing 21.5% of all procedures performed by medical practices⁷. In the same period, the number of surgical procedures at the HCUFPR's

Dermatology Clinic increased; diagnostic biopsies were also the most frequently conducted procedure there.

Cutaneous tumor surgeries have become a more integral part of the routine procedures carried out by dermatologists. Between 2002 and 2007, an increase in the global number of outpatient surgical procedures was observed; the surgical treatment of tumors increased at a faster rate than the number of surgeries linked to benign lesions (Figure 2). In 2002, the number of excisions with suture of benign lesions totalled 350, while the number of tumor excisions with suture levelled at 155 – a ratio of 2.25:1. During the studied period, the gap narrowed between these two procedures, and in 2007 those figures reached 222 and 212, respectively, shifting the ratio to 1.04:1. These values reflect an increase in the number of more complex and prolonged surgeries – with the closing frequently performed using grafts or flaps – performed at the outpatient clinic in the studied period, as compared to other surgical procedures. The precise number of procedures that demanded flaps or grafts for their closing

Graph 5 - Procedures conducted in the office between 2002 and 2007**Graph 7 - Cosmetic procedures performed between 2002 and 2007****Graph 6 - Outpatient surgical procedures performed between 2002 and 2007**

could not be verified, since this information was not available in the records analyzed for this study.

In this study, the number of cosmetic procedures was constrained by the availability of office consultations at the outpatient clinic, which are offered once a week, during a part-time shift only. As a result, they do not represent the real demand for such procedures. Among cosmetic procedures, chemical peelings are an alternative to dermatologic treatment. They are an important procedure in the residents' training: 104 peelings were performed in 2002 (representing 43% of all procedures conducted at the cosmetic clinic that year) and 181 (51.56% of procedures) were administered in 2007 – representing a growth of 74%. The most frequently executed peelings were retinoic acid, combined or not with Jessner's solution, and trichloroacetic acid in various concentrations, combined or not with Jessner's solution. Deep peelings, such as Baker-Gordon's, accomplished locally or on the full face, are part of the HCUFPR

residents' training and were carried out once a year, on average, over the last 5 years.

Since 2002, blepharoplasty has been performed at the cosmetic clinic of the HCUFPR,

84 during the studied period. In 2007 alone, 32 blepharoplasty procedures were carried out, among other surgeries of the

superior and inferior eyelid, an average of 2.66 surgeries per month. This increase is largely due to the inclusion of a complementary year of formation in the residents' training, starting in 2006/2007, when procedures of higher complexity were included in the program.

Localized dermabrasion in small areas (such as the correction of perioral wrinkles) or in more extensive areas (such as the correction of acne scars) is a routine procedure in the dermatology residents' second year of training at the HCUFPR.

During the studied period, there was a progressive growth in the number of such procedures, with 14 in 2007, from a peak of 16 in 2005, and 7 in 2002.

Liposuction in small areas (such as in the submentonian area), was carried out only sporadically at the clinic, with 2 procedures performed in 2007. Although liposuction is well established as within the dermatologists' area of expertise, it is seldom performed at the service in question, arguably due to the presence of a very well established plastic surgery clinic at the HCUFPR

– a medical specialty more commonly linked to liposuction and to which more patients are directed.

Cutaneous filling procedures were conducted sporadically since 2002, with one acne scar correction procedure performed that year. In subsequent years there was a progressive increase in the number of cutaneous fillings, culminating with 40 procedures in 2007, meaning an average of 3.33 procedures per month; this figure constitutes 11.4% of the total number of procedures conducted at the outpatient dermatology clinic. The factors that contributed to this increase are a decrease in cost

and the continuous exposure in the mass media, which have lead to the popularization of the procedure and a higher acceptance from patients. The most commonly used filler in the analyzed years was hyaluronic acid, due to its well established security profile. Polymethyl methacrylate was used to treat lipoatrophy in HIV positive patients – the same substance used in the treatment program developed by the Brazilian Ministry of Health. In 2007, 10 lipoatrophy fillings were conducted, representing 25% of the total number of cutaneous fillings performed that year.

Chart 2 - Distribution of dermatologic surgery procedures among medical residency years

Year 1	Year 2	Year 3	Year 4
Surgical removal of cutaneous tumors with simple excision and suture	Surgical removal of cutaneous tumors with reconstruction through grafts	Surgical removal of cutaneous tumors with reconstruction through grafts	Micrographic surgery
Electrocoagulation	Scar corrections	Dermabrasion	Deep and pan-facial phenol peelings
Chemosurgery	Surgical re-pigmentation techniques	Nail unit surgery	Sclerotherapy
Biopsy	Cryosurgery	Superficial, medium depth and combined chemical peelings	Blepharoplasty
			Small volume liposuction
			Fat grafts

As with cutaneous fillings, the application of botulinum toxin was a procedure hardly executed in the early 2000s that presented progressive annual increases thereafter. In 2007, 36 applications were performed, with an average of 3 applications per month. The most frequently treated area in all years studied was the upper third of the face.

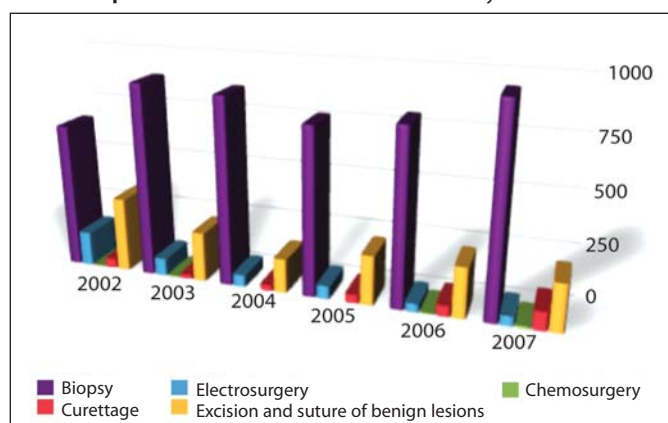
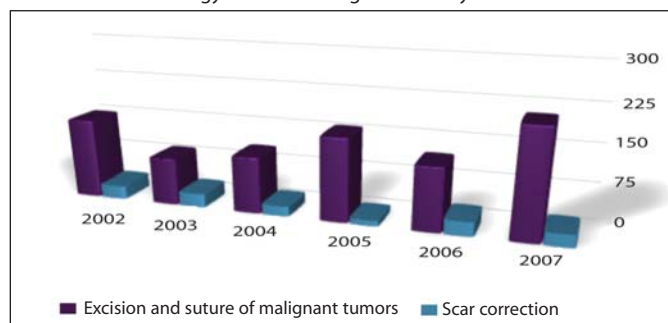
As the popularity of botulinum toxin and cutaneous fillings increases, some procedures are gradually performed less often at the clinic studied. For instance, sclerotherapy was conducted on a weekly basis in 2002, and progressively decreased up until 2007, when no such procedures were executed. This trend may be explained by the intense diversification of cosmetic procedures that can be conducted at the outpatient clinic, consequently leaving procedures such as sclerotherapy to be exclusively executed by the surgeons of HCUFPR's well established vascular medicine clinic.

The number of electrolysis procedures has also declined, with 38 in 2005, falling to 18 in 2006, and only 9 in 2007. Underlying this trend is the use of the Light Sheer® laser for treating undesired hairs in R3, started in 2006, with electrolysis recommended only for specific cases in which lasers cannot be used.

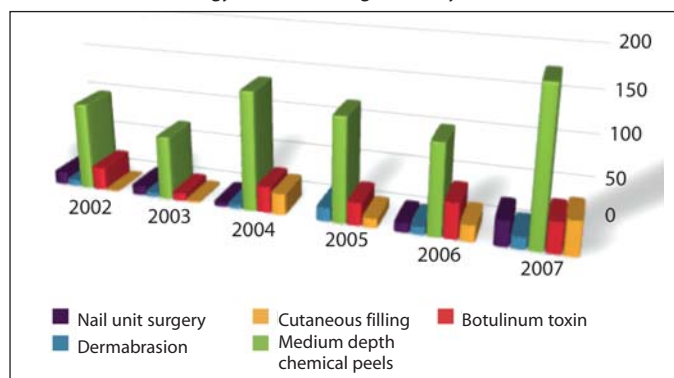
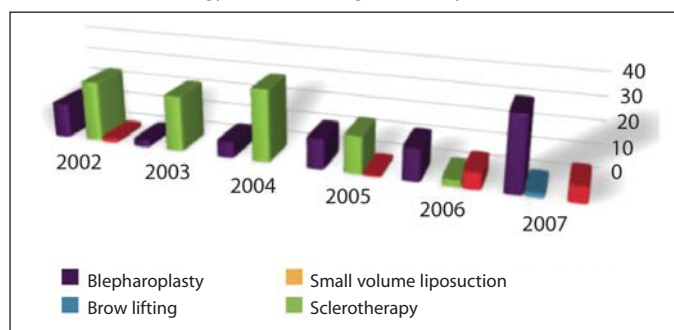
Analyzing our data according to the distribution of the procedures among R1, R2, R3 and R4 years (Table 2), we have identified the predominance, in absolute numbers, of procedures that are in the programmatic contents of first-year residents (Figures 8, 9 and 10). This distribution also coincides with the procedures that are executed most frequently in other dermatologic offices ^{7,8}.

The retrospective character of the analysis – using the records of the medical team, the nursing service and the HCUFPR's

System of Statistics and Planning (SESPLAN) – were lim-

Graph 8 - Procedures recommended for first-year residents**Graph 9 - Procedures recommended by the Brazilian Society of Dermatology for the training of second-year residents**

iting factors of the study. The analysis of the records of the medical team was hampered by the availability of notes on cutaneous alterations only, with no description of the procedure to be conducted; unscheduled procedures, such as cryosurgery and chemosurgery, were also not recorded in these records. Likewise,

Graph 10 - Procedures recommended by the Brazilian Society of Dermatology for the training of third-year residents**Graph 11** - Procedures recommended by the Brazilian Society of Dermatology for the training of fourth-year residents

the availability of notes on skin alterations only in the nursing service records also hindered the analysis of the data. The data supplied by SESPLAN also imposed limitations, because they are obtained from the patients' register service, which includes only a limited number of pre-designated procedures.

CONCLUSIONS

A substantial increase in the number of office consultations and surgical procedures at the HC UFPR's

Dermatology Clinic was observed by analyzing data linked to these events between the years of 2002 and 2007.

Among surgical procedures, the increase in the number of outpatient surgical procedures for the treatment of cutaneous tumors – which were previously forwarded to the care of other medical specialities – is outstanding, demonstrating the improvement in the residents' training in the Dermatology Clinic.

In the outpatient cosmetic clinic, there has been an increase in the total number of procedures, and a diversification in the types of procedures performed, evolving from a clinic mainly focused on the treatment of unattractive lesions into a service that offers treatment for cosmetic conditions too. These findings do not represent a change in the demand for treatments, but offer an illustration of the residents' learning process. ●

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