

CERVICAL POLYPS: A COLPO-CYTO-HISTOLOGICAL STUDY

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Summary: From a review of 1477 polyps of the cervical canal it appears that these very frequent lesions occur between the ages of 41 and 50 in relation to the disendocrine picture which characterises that age.

The histological point of view reveals a picture in which the adenomatous variety predominates, followed by the mixed forms.

The Authors, following colposcopic checking repeated in time on the same patients, are able to demonstrate that squamous metaplasia may originate in the subcylindrical reserve cells.

There have not been cases of carcinomatous degeneration, inasmuch as their only case proved to be a metastasis of continuity from a carcinoma of the cervix, for which reason such neoplasias are not be considered precancerous lesions.

The polyp of the cervical canal is established as a very frequent event in gynecologic pathology since it concerns 2-5% of adult women^(1, 9, 12, 16, 17, 26). It is recorded above all in fertile age, especially in the pluripara in perimenopausal age, whilst it is exceptional before 15-20 years of age^(9, 13, 17, 22, 25, 29).

This neoformation is found in 6% of colposcopic enquiries (both as a single image and as associated with other lesions) and constitutes 98% of all benign tumors of the neck of the uterus^(8, 14). Other Authors report slightly lower figures^(1, 3, 7, 19, 24); in our case series we present an incidence of about 5% (tab. 1).

derlying connective tissue. It presents an endo- or eso-cervical location according to the point of implant and to its dimensions^(1, 3, 9, 14, 15).

Such neoplasias give clinical evidence inasmuch as they are accompanied by leucorrhea (purulent in cases of polyps infected or gangrenous) and by irregular hematic loss (exceptionally reaching actual metrorrhagia), preceding and/or following menstruation. These hematic losses depend, for quantity and duration, above all on the volume and localization of the polyp; the most important and frequent are the contact hemorrhages^(1, 3, 14, 17, 22, 26).

On the other hand they are abitually encountered in the course of a gynecological check-up (asymptomatic polyp). Only exceptionally is it the cytologic cervical examination which, on account of the presence of numerous cylindrical cells and diffused phenomena of squamous metaplasia, leads to a diagnosis and therefore to a colposcopic examination^(1, 3, 4, 9).

Macroscopically it is a matter of neoformations, generally pedunculate with bases of implant in the mucous of the cervical canal; they may be single or multiple. The consistence is varied, most often soft and sometimes cystic, while the co-

Table 1. - *Frequency of cervical polyps.*

Authors	Frequency
Mateu-Aragones (1971)	5.05%
Carrera-Dexeus-Coupez (1974)	6.00%
Grismondi and Coll. (1980)	4.61%
Vicentini and Coll. (1981)	5.10%
Caroti-Siliotti (1987)	4.98%

The cervical polyp originates in the monostratified muciparous cylindrical epithelium of the cervical canal and its un-

lour is red or wine-red. The shape is equally varied: cockscomb, parrot's tongue, fan-like, with various layers. Some of them are scarcely noticeable, others reach dimensions of 1-2 cm, while exceptionally they exceed 3-4 cm (polyps have been described as big as an egg, or the size of baby's head) (11, 12, 21, 22, 26).

At the histologic examination they appear superficially covered by mucoproducing cylindrical epithelium, which may be affected by more or less extensive phenomena of squamous' metaplasia. Fluhmann, on examining 2.000 cervical samples found squamous metaplasia in 29% of mucous polyps (2, 7, 9, 12, 21) (fig. 4).

The different vascular-connective configuration of the stromal axis allow us to distinguish a few histologic varieties (3, 26, 28) (figs. 1, 2, 3):

a) *adenomatous polyp* which includes in the stromal axis a notably varied number of glands of endocervical type more or less ramified or slightly dilated. In this regard it must be noted that same Authors reserve the term adenomatous to polyps with a fuller glandular component, instead, calling mucous those polyps which present minute, rare glands (17).

b) *adenomatous-cystic polyp* which presents in the stromal axis single or few notably dilated glands, filled with mucous and covered by a single thread of more or less flattened elements.

c) *fibrous polyp* in which the stromal axis is full of connectival fibres and presents a fibroblastic component of variable entity in relation to the age of the neoformation.

d) *angiomatous polyp* in which the stromal axis includes numerous more or less large vessels sometimes covered by swollen endothelium.

e) *mixed forms* in which several of the above-described forms are present contemporaneously.

Independently of the histologic variety there may also be phenomena present, sometimes very accentuated, of flogosis and necrosis. Besides, during pregnancy it is common to meet deciduosimilar modifications of the stromal axis which are at times so accentuated as to justify the term decidual polyp (3, 9, 17, 19).

It is a universally accepted idea that cervical polyps may undergo a malignant degeneration (0.2%-1.5% according to some case series) (1, 3, 9, 11). In this regard, however, Literature expresses notable disagreement, and, particularly, has not yet made clear whether these neoplasias should be considered of the standard of precancerous lesions in the strict sense.

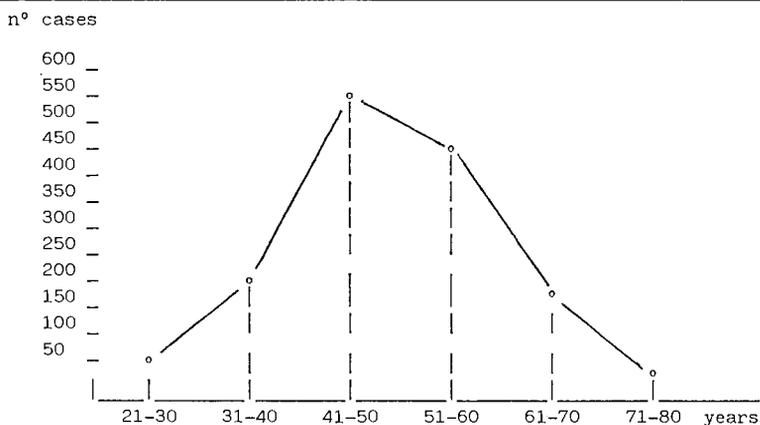
In cases in which carcinomatous degeneration occurs it is usually a matter of squamous carcinoma and the degeneration begins on the surface of the polypoid formation, while the basal zone preserves a normal epithelium, at least for a while (3, 11, 17, 19, 26).

Considering the impossibility of a complete exploration of the cervical canal at the colposcopic examination, and with the aim of avoiding relapses and of individuating pathologies of the internal genital organs, associated with the so-called "sentinel polyp", it is common gynecologic practise in the course of polypectomy to carry out a curettage of the uterine cavity (13, 20).

Even if the cervical polyp cannot be considered with certainty a sign or symptom of endometrial pathology (18, 20) it is probable that, even on the basis of etiopathogenetic suppositions, it may be associated with an endometrial pathology on a hyperestrogenetic basis (endometrial polyp, hyperplasia and, according to some Authors, submucous fibromas) (18, 20, 52).

The revision of our case series is aimed at the evaluation of the frequency of the various histologic types, the incidence of malignant transformations in each of them, and the eventual associated pathologies.

TABLE 2. — Incidence of the cervical polyp in relation to age.



MATERIAL AND METHODS

Among the women colposcopically examined from January 1971 to December 1986 at the Civil Hospital of Dolo (Venice) we encountered 1477 cases of cervical polyps.

In all cases colposcopy was carried out, with an examination and, where necessary, a biopsy of the portio.

In the 523 cases which were admitted to the hospital a fractioned examination of the cervical canal and the uterine cavity was carried out.

RESULTS

In the course of the sixteen years (1971-1986) 1477 polyps of the cervical canal were biopsied. The hematic loss following their removal was always slight, easily controllable, and only exceptionally required the application of local hemostatic protection.

The ages of the patients ranged between 22 and 78 years and the incidence of the lesion varied considerably according to the different decades of life (tab. 2).

Age	Cases	
21-30 years	60	(4.06%)
31-40	214	(14.49%)
41-50	547	(37.03%)
51-60	442	(29.93%)
61-70	166	(11.24%)
71-80	48	(3.25%)
Total	1477	(100%)

Regarding parity the pluriparae had a higher incidence than the primiparae and the nulliparae respectively (tab. 3).

The results of the histologic examination in relation to the frequency of the diverse varieties may be summarised as follows:

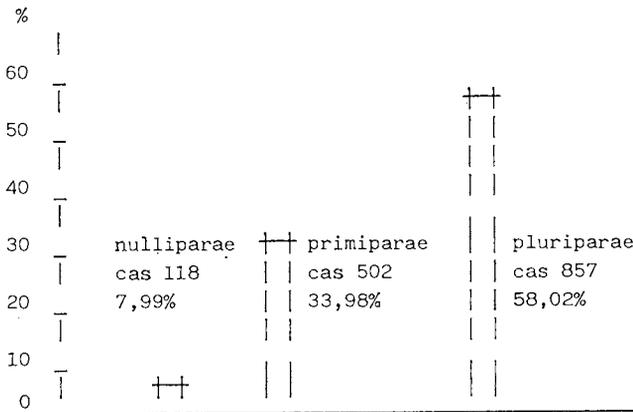
Adenomatous polyps	cases 835	(56.53%)
Adenomatous-cystic polyps	cases 161	(10.90%)
Fibromatous polyps	cases 25	(1.70%)
Angiomatous polyps	cases 133	(9.01%)
Mixed polyps	cases 322	(21.80%)
Fibro-angiomatous	cases 64	(4.33%)
Angio-adenomatous	cases 90	(6.10%)
Fibro-adenomatous	cases 150	(10.16%)
Fibro-angio-adenomatous	cases 18	(1.21%)
Polyps with carcinomatous degeneration	cases 1	(0.06%)

We refer, on the other hand, in detail to the case characterised by carcinomatous degeneration (fig. 5).

Elena F., 70 years old; presented leukoxantorrea and hematic loss and bore a cervical polyp of 2 cm diameter.

This, on histologic examination (BD 22056) appeared to consist of abundant fibrous connective, including numerous slightly dilated cervical glands. The su-

TABLE 3. — Incidence of the cervical polyp in relation to parity.



perforial covering was formed in part by a festoon of globous and elongated elements, somewhat crowded and atypical. These elements increased in the lumen of the gland included in the stromal axis, and in certain zones, hence circumscribed, overcoming the basal membrane infiltrating the stroma. Even the peduncle of the polyp appeared involved in the process.

Diagnosis was therefore placed on an adenomatous polyp with extensive areas of carcinomatous transformation.

Hysterectomy was subsequently performed.

The seried histologic examination of the uterine cervix (BD 22315) revealed the presence of a carcinoma of the portio and of the cervical canal with scarcely differentiated elements, initially infiltrating.

The vaginal colpocytology, carried out in all the cases, showed no significant difference in respect to patients not bearing polyps of the cervical canal.

The histologic examination showed phenomena of squamous neoplasia in 225 cases equal to 15,23%.

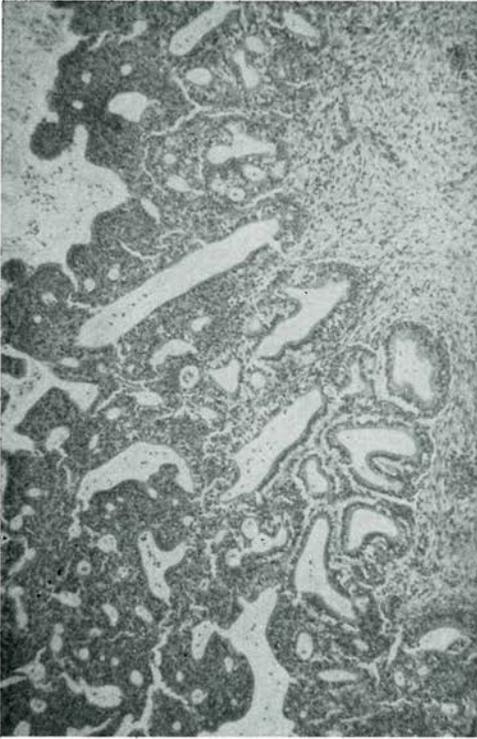
From this aspect (from colposcopic observations repeated from time to time on the same patients) we evidenced how the

polyp reached the endocervix, by a progressive prolongation from the base of its implantation to the external uterine orifice. From there, by an increase in volume, it protruded into the vagina, thus becoming esocervical. Having overcome the external uterine orifice by means of its apical portion, it had thus come into contact with the vaginal acid ambient, and given rise to those metaplastic phenomena with the substitution of the primitive cylindric, by the malpighian covering.

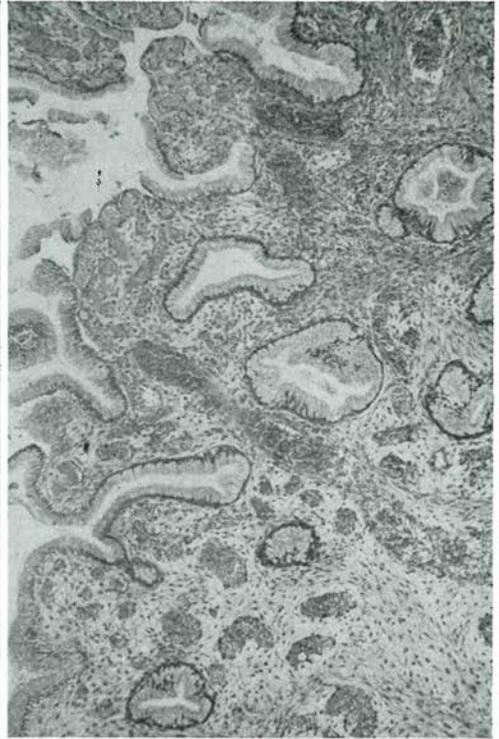
In the 523 cases admitted into hospital and submitted to the fractioned examination of the cervical canal and of the uterine, we studied the eventual associated genital pathology.

Endometrial pathology is that most frequently associated with cervical polyps (108 cases equal to 20.65%): cystic-glandular hyperplasia appears in 13.57%, endometrial polyposis in 6.13%, adenomatous hyperplasia in 0.57%, and atypical adenomatous hyperplasia, like endometrial adenocarcinoma, in 0.19%.

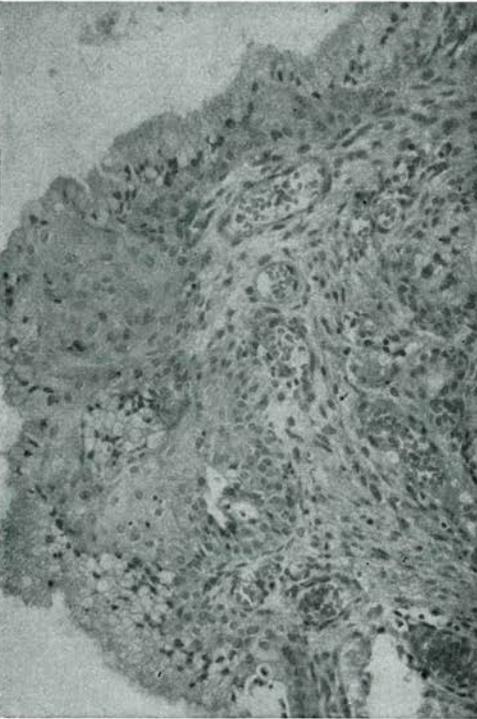
The submucous fibroma is associated with the cervical polyp in 5.16%, while annexial pathology occurs in 2.68% of cases.



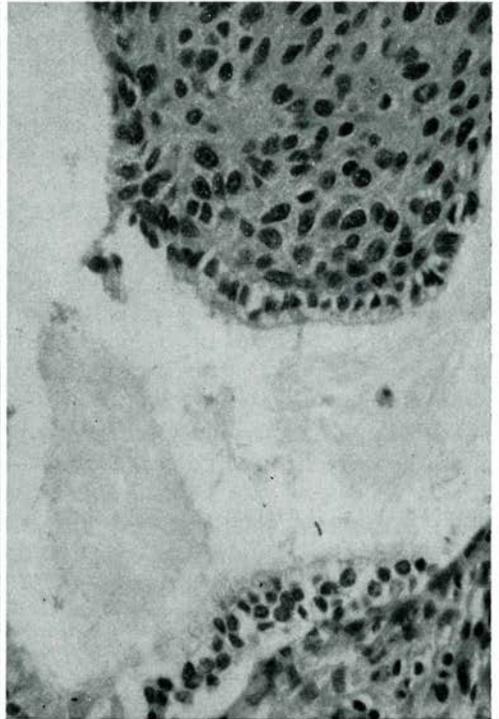
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2



4



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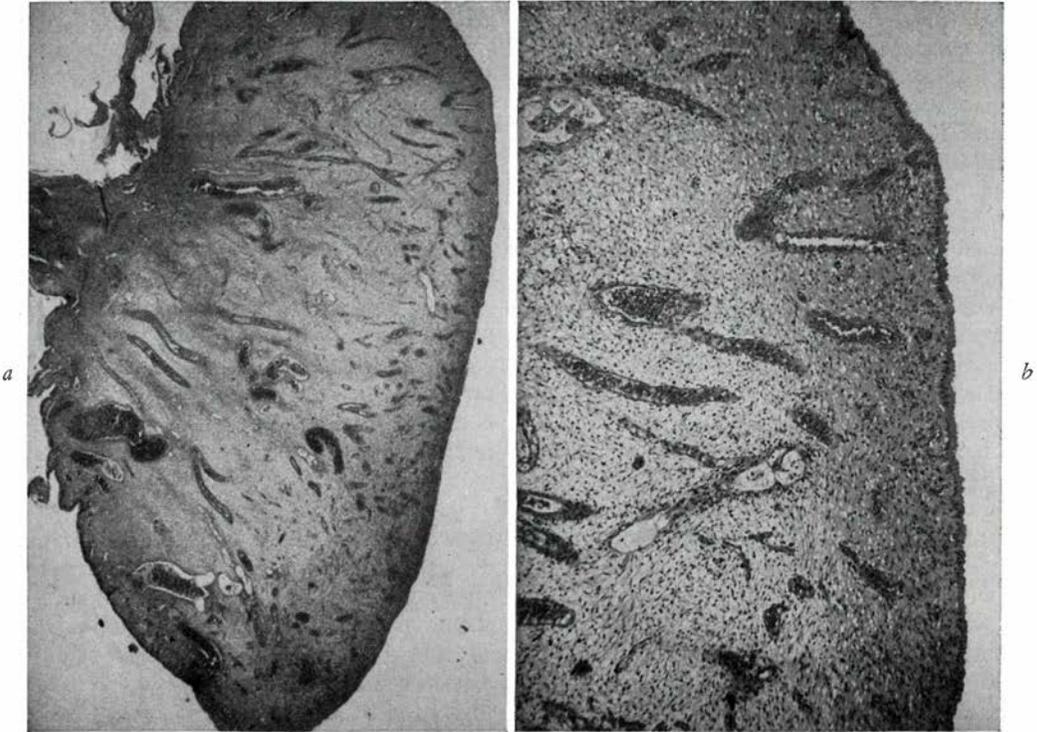


Fig. 3. — Angiomatous polyp *a*) (E.E. $\times 25$). In the major enlargement note the wealth of congested and ectasic blood vessels; *b*) (E.E. $\times 60$).

DISCUSSION

The results which emerged differed little from what had been shown in the case series of the various Authors who preceded us (^{1, 2, 4, 7, 10, 13, 20, 25, 29}).

With regard to age, cervical polyps arise most frequently (66.96%) in the twenty years included in the range 41 to 60 years, with peaks of maximum incidence 37.03%) between 41 and 50. The frequency decreases significantly in the preceding decades (cases younger than 22

years) and the successive (cases older than 78 years).

Therefore the age of highest frequency appears to be anticipated by 10 years compared with other case series (¹³) confirming current etiopathogenetic views, above all those which evaluate a disendocrine condition (premenopause).

On the basis of these elements we may consider that the polyp represents the result of hormonal stimuli, the estrogens in particular, on the epithelium of the cervi-

Fig. 1. — Adenomatous microglandular polyp (E.E. $\times 60$).

Fig. 2. — Mixed adenomatous-angiomatous polyp (E.E. $\times 100$).

Fig. 4. — Mucous polyp with squamous metaplasia of the superficial and glandular epithelium (E.E. $\times 250$).

Fig. 5. — Adenomatous-cystic polyp with areas of carcinoma infiltration and small cells (E.E. $\times 250$).

cal canal, not excluding that sometimes local irritative factors, both of the cervical mucosa and the underlying connective, also intervene in the etiopathogenesis.

With regard to the histological classification a single category of mucous and adenomatous polyps have been gathered together, because the evaluation of the quantitative element of the glandular component does not seem to be sufficiently justified either on the doctrinal or the practical plane.

However, adenomatous and adenomatous-cystic polyps have been distinguished, since it does not yet appear to be established whether the cystic hyperplasia of the glands of the polyp (which is not unlike that of the endocervical mucosa)⁽²⁷⁾ precedes the polyp's formation or instals itself secondarily on an adenomatous polyp.

In any case, polyps of adenomatous component appear very frequently (67.43%), while those of stromal character are much more rare (fibromatous 1.7%, angiomatous 9.01%). The mixed forms with two or three characterisations are slightly more frequent (21.8%).

The demonstration that the processes of originally squamous metaplasia, often exclusively in the apical portion of the cervical polyp, seem to demonstrate irrefutably that the metaplastic processes can originate in the reserve subcylindric cells. This would lead to the rejection of the hypothesis according to which the substitution of the cylindric epithelium by the malpighian one would occur exclusively by means of a sort of centripetal sliding of the latter, from the margin of the lesion towards the cervical canal.

Instead, from our case series, examples of carcinomatous transformation do not emerge, because the only case that presented itself might be interpreted epicritically as a metastasis by continuity from a carcinoma of the uterine cervix.

This, obviously, does not exclude the possibility that a malignant neoplasia may

arise primitively in the epithelium covering a polyp, but it allows for the refutation that the cervical polyp constitutes itself a precancerous lesions.

This naturally gives rise to the question: why is the cervical polyp generally an unusual event, and much rarer than the encounter with a cervical adenocarcinoma which, after all, originates in the same mucosa in which polyps are formed? An apparently simplistic hypothesis might be presented by considering that these neoformation are always removed, whereby in practise they are withdrawn from the possible processes of mutagenesis and cancerogenesis, which are known to take a long time.

In this respect some Authors have shown an increase of the superoxide dismutated enzyme cast off in the polyps, especially in those with phenomena of squamous metaplasia⁽⁶⁾. It is notable how such enzymes increase conspicuously in cancerogenesis, which are known to take a (dysplasia or CIN) of the cervix^(5, 13).

It could therefore be hypothesised that where polyps are left in situ they might present a tendency towards malignant transformation in a percentage less rare than those already known.

The observation, however, confirms once again the opportuneness of examining histologically all polypoid formations, since diverse cervical and endometrial lesions may present esophitic growths with pictures which are macroscopically difficult to differentiate from those of the cervical polyp.

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