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# Journal of Dentistry and Oral Hygiene

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## Case Report

# Prophylactic treatment dens invaginatus (type 1): An uncommon presentation

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**Dens invaginatus is a developmental malformation resulting from the invagination of the enamel organ into the dental papilla. Type 1 invagination, is most common form. However, it may be easily overlooked because of the absence of any significant clinical signs of this anomaly. Since the risk of necrosis and pulp complication is higher in such dental malformation, an early identification of the affected tooth is important and the prophylactic management is recommended. The aim of this report is to describe an unusual case presenting invagination affecting four teeth. The clinical and radiographic features will also be highlighted and the prophylactic treatment explained.**

**Key words:** Anomalous teeth, dens in dente, dens invaginatus, maxillary central incisor.

## INTRODUCTION

Dens invaginatus is a dental malformation caused by an infolding of the enamel organ into the adjacent dental papilla during the development of the tooth before calcification has occurred (Rajasekharan et al., 2014).

The exact aetiology of dens invaginatus is unclear. Uncontrolled growth of a portion of the enamel epithelium, external forces exerted on the developing tooth germ by the growing dental arch, and adjacent developing tooth germs have been suggested to explain this dental malformation. Other theories include, trauma and infection during tooth development was also proposed to explain these dental anomalies. In addition, there is significant evidence suggesting a genetic component in the development of dens invaginatus (Bose, 2014).

This developmental malformation is more common than we generally thought. The prevalence of the dens

invaginatus varies between 0.3 and 10%. The wide ranges of the prevalence are explained by the different inclusion and exclusion criteria to diagnosis dens invaginatus and the geographical difference of the population studied (Çolak et al., 2012).

Maxillary lateral incisor is the most commonly affected teeth (90%), frequently with bilateral occurrence (43%), followed by central incisors, canines, premolars and molars. Invagination of mandibular incisors is rare and it has only been reported in isolated case reports (Bose, 2014).

The clinical presentation of dens invaginatus depends to its severity. It can range from a pronounced cingulum or occlusal pit to a deep foramen caecum that may be the first clinical sign of an invaginated tooth (Chandramani, 2012; Çolak et al., 2012).

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Other changes in the form can be observed, including a peg or barrel shaped anatomy, incisal notching, an increased labio-lingual or mesio-distal dimension and a prominent palatal cingulum (Bose, 2014).

The most commonly used classification system was proposed by Oehlers (1957) and Çolak et al. (2012). Based on the radiographic appearance of the invagination, three-forms of the anomaly are described.

Type I is a minor form with an enamel-lined infolding confined to the crown, not extending beyond the amelo-cemental junction.

Type II extend below the cemento-enamel junction and ends in a blind sac.

It does not communicate with the periodontal ligament but may communicate with the pulp space.

Type III invaginations extend through the root and communicate with the periodontal ligament laterally (type IIIa) or at the apical foramen (type IIIb).

Despite the fact that the type 1 invagination is the most common form, (73%) there is today a lack of studies and reports how to manage such invaginations.

However, early management of such malformations is crucial. Indeed, invaginations are inaccessible to cleaning. Therefore, the risk of micro-organism to reach and to infect the pulpal tissue is important, that may lead to pulp necrosis (Bose, 2014; Çolak et al., 2012)

In this present paper, we report an unusual case presenting four invaginations on the maxillary incisors in which prophylactic management was proposed.

## CASE REPORT

A healthy, 22 year-old female patient was referred to our department by the patient's general dental practitioner for the extraction of the wisdom teeth. The routinely clinical examination, showed a pronounced cingulum and a deep foramen caecum on the palatal surface of the maxillary incisors.

The gentle probing of the foramen revealed a carious lesion presenting rough surface covered with plaque and discolored tissue around the foramen (Figure 2).

Moreover, the teeth respond normally to the cold vitality test, with no pain on percussion and palpation. Moreover the periodontal probing depths were not >2 mm.

The radiographic examination revealed a deep fissuring pointing towards the pulp with a radiolucent pocket surrounded by a radio- opaque enamel border revealing the presence of an invagination. The radiographic appearance of the invagination is confined to the crown, not extending beyond the amelo-cemental junction (Figure 3). Therefore, a diagnosis of dens invaginatus (Oehlers' Type 1) was established on the maxillary incisors and prophylactic managements of these invaginations were proposed to the patient in order to prevent any pulpal complications.

After buccal infiltration using 3% mepivacaine with

epinephrine (Medicaine, Médis, Tunisia), the lumen of the invagination was reamed using a round bur. All softened and carious lesion were also removed (Figure 4).

The next step was disinfecting the cavities using 2% chlorhexidine and a flow composite resin was used to seal the cavities as recommended by the manufacturer (Nextcomp flow, Meta Biomed, Chungbuk, Korea) (Figure 5).

## DISCUSSION

Invagination is more common than we thought. Due to geographical differences and the inclusion/exclusion criteria, it's prevalence varies between 0.3 and 10% (Çolak et al., 2012). Dens invaginatus (Oehlers' type 1) appears to be the most common from (73%) among this malformation (Çolak et al., 2012). As reported by several authors, maxillary lateral incisor is the most commonly affected tooth (90%) frequently with bilateral occurrence (43 %) followed by central incisors (Bose, 2014). This case, provide an uncommon finding with four invaginations affecting maxillary incisors. As far as we know, there is no report in the literature of such clinical configuration. It could be the first case described in the literature.

Clearly observed in this case the deep foramen caecum is always the first clinical sign to suspect an invaginated tooth (Chandramani, 2012; Çolak et al., 2012). Nevertheless, despite the presence of a prominent palatal cingulum and an increased labio-lingual dimension on the affected tooth, the crown remains normally shaped (Figures 1 and 2). It is in agreement with Oehlers who described three different morphological types of the invaginated teeth: Normal-shaped crowns, peg shaped crowns and crowns with Talon cusp.

Until today, there is a lack of consensus on the criteria describing invaginated teeth. For some authors, palatal notch or pit constitutes an invagination, whereas, others consider the presence of a deep foramen caecum as an invagination. This lack of consensus for describing invagination is one of the reasons that explains the wide range of the prevalence of the invaginated teeth 0.3 to 10% (Çolak et al., 2012)

Oehlers classification is based on the radiological aspect of the invagination. Clearly observed on the preoperative radiograph, Type 1 invagination is defined as a minor form with an enamel-lined infolding confined to the crown, not extending beyond the amelo-cemental junction (Figure 3). Although no clinical evidence of the presence of an invagination on the left central incisors, the close radiological aspect between the two central incisors leads to consider it as a one.

It is well documented that the risk of pulp necrosis or complication on invaginated tooth is high. Indeed, due to the clinical and histologic presentation, the invagination is inaccessible to cleaning and micro-organism penetrates



**Figure 1.** The clinical labial view showing a normal shaped crowns on the central incisors.



**Figure 2.** The clinical palatal view shows prominent palatal cingulum with increased labio-lingual dimension on the affected tooth. Note the bifid the discoloration around the deep foramen caecum due to carious lesion.



**Figure 3.** Pre-op intraoral radiograph of a maxillary incisors showing a deep fissuring pointing to the pulp lined by a radio-opaque borders.





**Figure 4.** Clinical palatal view after elimination of the carious lesion from the invagination.



**Figure 5.** Clinical palatal view showing flowable composite resin restoration used to seal the cavities.

easily through a hypomineralized enamel. It has been also shown that channels may exist between the invagination and the pulp which may lead the pulp to be infected (Chandramani, 2012).

For these reasons, a preventive approach was recommended to treat such dental malformations (Thakur et al., 2014). Composite restoration procedure has been widely used to seal the lumen of the invagination. Moreover, the use of calcium hydroxide to cover the bottom and the buccal wall of the lumen and the use of glass ionomer as a definitive restoration were also described (Thakur et al., 2014).

When the tooth is vital, with no signs of pulpal

complications and when the prophylactic management is carefully performed, success can be expected in type 1 invagination with a high success rates. Contrarily to the prophylactic management of type 2 invagination which appears to be less predictable (Çolak et al., 2012; Thakur et al., 2014).

## CONCLUSION

Dentist may be unfamiliar with the invaginated teeth. Therefore, knowing the clinical and radiographic manifestations is important to early identify this dental

malformation. Care should be taken to properly manage these invaginations in order to avoid any pulpal complications. Composite restoration provides a simple way to prophylactically treat such lesions. When the procedure is carefully performed, with an early identification, success can be expected with a high survival rate. This present report shows a rare case presenting four type 1 invaginations.

#### **Conflict of interest**

The authors declare that they have no conflict of interest.

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*Full Length Research Paper*

## Satisfaction survey among patients and staff of the Municipal Center of Oral Health in Ouagadougou

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The high prevalence of oral diseases in Burkina Faso, and the difficulty in accessing adequate care, have made the Ouagadougou municipality to create the Municipal Center of Oral Health (MCOH). This study was undertaken to assess the level of satisfaction of patients and staff at the MCOH. It aimed also at establishing the reasons for consultation and the treatments recommended to patients who attend the MCOH. The study was carried between the 1st of June and the 15th of July, 2012 and achieved by using a questionnaire. Five hundred and two (502) patients and 24 employees (96%) were interviewed. Endodontic emergencies represented 48.8% of the reasons for a consultation. Endodontic treatment was mostly undertaken (51%). The majority of patients (99%) would return to the MCOH to receive care. The level of satisfaction with the salaries was 54.2%. Despite this, 89% of the employees were motivated to go to work each day. The MCOH must emphasize on development of the quality of its management. Furthermore, it is important to ensure that employee suggestions are taken into account, as these are an important component of satisfactory patient treatment.

**Key words:** Ouagadougou, patients, staff, satisfaction, reason for consultation, treatment.

### INTRODUCTION

In light of the global burden of oral diseases and trauma, access to and the quality of the healthcare available to populations in developing countries are important issues that warrant consideration. The worldwide prevalence of untreated caries in permanent teeth is about 35% (Marcenes et al., 2013). Furthermore, increasing

urbanization is associated with a rise in the prevalence of several oral diseases. In particular, it promotes access to food items and beverages that contain sugars, which is one of the main risk factors for dental caries (Thorpe, 2006). Also, access to oral healthcare by disadvantaged populations who are the most affected by oral pathologies

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is often difficult, if not nearly impossible (Jaiswal et al., 2015). Indeed, access to private dental clinics is generally impossible without health insurance and the resources of public health entities that, unfortunately, are often limited (Rasteniene et al., 2015). Countries like Brazil have set up a health program to promote access to health care, free of charge for the most disadvantaged populations (Petrola et al., 2016). Moreover, In Brazil, the implementation of oral health policy requires the participation of local governments (Soares, 2012). With an average of one dental surgeon for every 150,000 individuals, very poor and indebted countries are cause for particular consideration with regards to issues pertaining to oral health (Petersen et al., 2005). This high prevalence, and the difficulty in having access to adequate care, have made the Ouagadougou municipality to create the Municipal Center of Oral Health (MCOH) in 2000 aiming to promote a public policy for access to care. This study had two aims:

1. Assessment of the level of satisfaction of patients and staff at the MCOH of Ouagadougou after 12 years of operations;
2. Establishment of the reasons for consultation and the treatments recommended to patients who attend the MCOH of Ouagadougou.

## MATERIALS AND METHODS

### Location, type and timeframe of the study

This was a descriptive and analytically oriented prospective study carried out with patients and staff at the MCOH of Ouagadougou, Burkina Faso. The survey was performed over nine days from the 1<sup>st</sup> of June to the 15<sup>th</sup> of July, 2012.

### Criteria for inclusion and for exclusion

All adult aged patients, whether literate or not, and who freely participated in the survey were included in the study. For minors, their parents provided the answers to the survey questions. Neither gender nor the level of education constituted criteria for exclusion. This study was approved by the administrative and health authorities of the municipality of Ouagadougou.

### Collection and processing of the data

This was achieved by using a questionnaire based on a form comprised of two sections: a clinical section (e.g. marital status, profession, level of education and reasons for the consultation) that was filled out while in the dental chair by the dental surgeon, and the satisfaction section that was filled out by the patient with assistance from an administrative intern so as to ensure that the questions were properly understood. The survey form was developed using Sphinx version 5 software (Parc Altaïs 74650 Chavanod, France). The caretakers post at the exit to the center, which is separate from the care unit, was set aside for filling out the second section of the form so that the patient replies to the questions were not influenced by the staff. The aim was mainly to collect information regarding the level of satisfaction in terms of the costing of the procedures, their overall satisfaction at the end of

their visit, and their loyalty to the MCOH. A pre-test performed with twenty-five patients, or 5% of the surveyed patients, made the questionnaire to be validated.

In terms of the staff, the aim of the survey was to determine the causes and the consequences of various levels of motivation of the employees of the MCOH. The questionnaire that was developed using Sphinx version 5 software (Parc Altaïs 74650 Chavanod, France) comprised 20 questions. The following variables assessed the level of satisfaction with regards to the current salaries, the influence of the director and the department heads on the level of employee motivation, their pride in representing the MCOH, and their suggestions. Given the high level of instruction of all the employees of the Center, there was no need to carry out a formal pre-test. Responses were collected in a box. To create complete trust of employees, neither age nor profession were reported.

### Statistical analyses

The statistical analyses of the data were done using Sphinx version 5 software (Parc Altaïs 74650 Chavanod, France). The  $\chi^2$  (Chi<sup>2</sup>) test was used for comparison of the two statistical variables. Differences were considered to be significant if  $p < 0.05$ .

## RESULTS

### Socioeconomic characteristics of the surveyed patients

Five hundred and two (502) patients were interviewed and 58.6% were female versus 41.4% males ( $p = 0.0892$ ). The sex ratio was 0.74. The average age was 33.7 years, ranging from 13 to 60 years of age. The level of instruction required to complete the forms revealed that 23% of the patients were illiterate. Patients who had undertaken tertiary studies represented 24.3% of the sample, secondary level studies 31%, and primary level studies 21.7%. Most of them (95%) lived in Ouagadougou. Patients with high incomes (e.g. business people and private sector employees) represented 11.5%, those with average incomes (e.g. public sector employees and retirees) accounted for 17.5%. The majority of the sample (71%) comprised of patients with low incomes (e.g. casual employees, students, unemployed and domestic workers) ( $p = 0.0001$ ).

### Socioeconomic characteristics of the employees

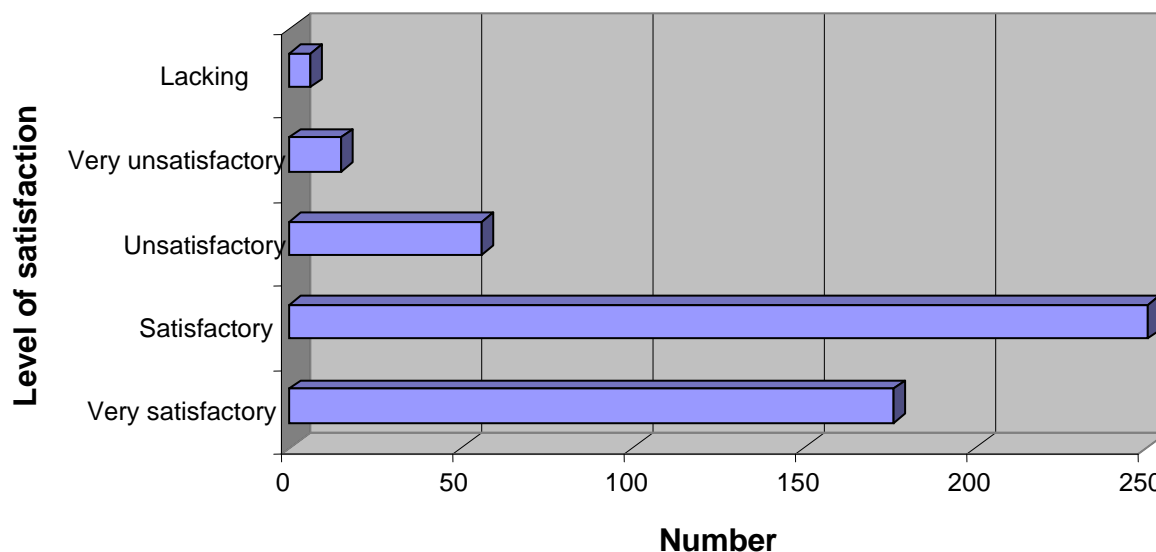
Twenty-four (24) employees (96%) were interviewed. Only one was absent for the duration of the survey. There were more female employees (54.2%). Many of them were married (62.5%). Most employees (50%) were 35-45 years of age. Upper-level employees accounted for 25%, the mid-level ones comprised 33.3%, and junior staff 41.7% of the sample.

### The reason for the consultation and the recommended treatment

Toothache was the main cause for a consultation in

**Table 1.** Reasons for a consultation.

Reasons for a consultation		Patients (%)
<b>Reason for consultation due to pain</b>		<b>356 (70.9)</b>
Endodontic emergencies		245 (68.8)
Acute cellulitis		82 (23)
Incidence of wisdom tooth progression		16 (4.5)
Alveolar-dental trauma		13 (3.7)
<b>Other reasons for consultation</b>		<b>146 (29.1)</b>
Conservative dentistry reasons	Dental carie	12 (8.2)
	Major crown decay	8 (5.5)
Periodontal reasons	Tartar periodontitis	35 (24)
	Alveolitis	2 (1.3)
Oral surgery reasons	Tooth loss	49 (33.6)
	Defective prosthesis	8 (5.5)
Dental prosthetic reasons	Dento-maxillary disharmony	6 (4.1)
	Functional disturb	11 (7.5)
Orthodontic reasons	Cosmetic reason	15 (10.3)
Total		502 (100)

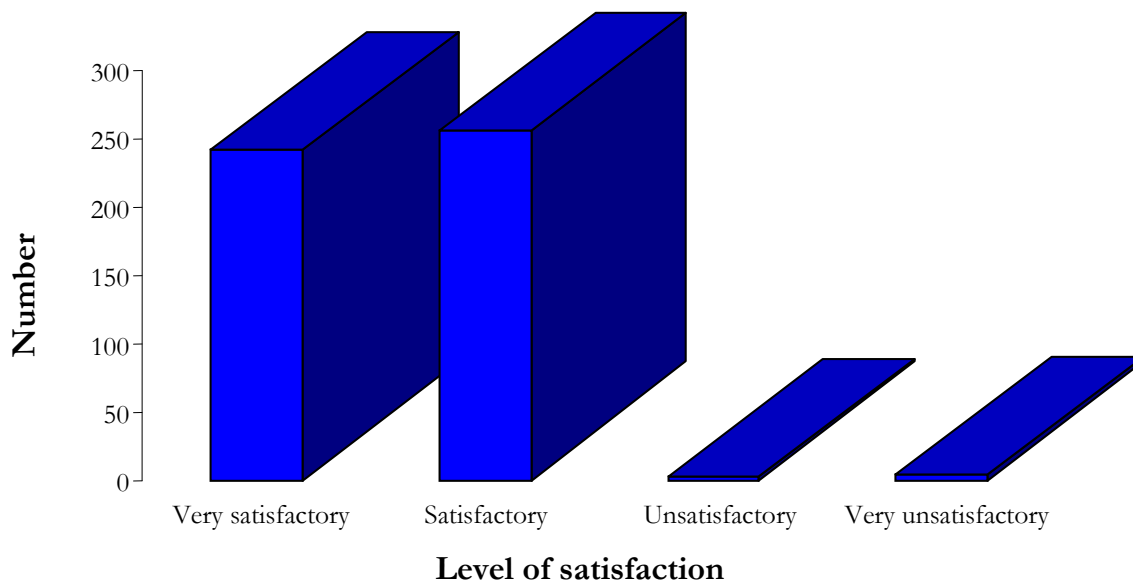
**Graph 1.** The level of satisfaction with regard to the prices.

70.9% of cases ( $p = 0.0001$ ). Endodontic emergencies comprised 48.8% of the reasons for a consultation and 68.8% of reasons due to pain (Table 1). The unit for conservative endodontic odontology received most patients. Endodontic treatment was undertaken the most (51%). Indications for dentinogenic treatment with amalgam restoration were performed in 104 patients (20.7%). Cosmetic restoration with composite resins took place for 11% of the patients. Indications for tartar removal occurred for 65% of the patients. Indication for removable prostheses was 29%, tooth extractions 22% and orthodontic treatment 1.2%.

## Patient survey

### *Level of satisfaction with regards to the costing*

A high proportion of the surveyed patients (85%) stated that they were very satisfied or satisfied with the price they had to pay at the MCOH (Graph 1). Not surprisingly, the latter often mentioned in the comments section that a reduction in prices would be welcome, although they nonetheless accept and recognize the presence of social costs. Fourteen percent of the patients were either not very satisfied or not satisfied with the cost of dental



**Graph 2.** The level of satisfaction with regard to the overall quality of the visit to the MCOH.

prostheses, which they deemed to be unaffordable. Conservative odontology care was deemed to be affordable with regards to amalgam restorations (55%), but poorly affordable for cosmetic restorations with composite resins (35%) and endodontic treatments (25%).

#### ***Loyalty of the clients in terms of satisfaction relative to the overall quality of the visit***

The majority of the patients questioned (99%) indicated that they would return to the MCOH to receive care. Five responders (1%) stated that they would not come back. The level of overall satisfaction of the surveyed patients was high (Graph 2).

#### **Employee survey**

##### ***The level of satisfaction with regards to the current salaries and motivational factors***

Despite only a modest (54.2%) overall level of satisfaction with the salaries (Graph 3), 89% of the employees said they were motivated to go to work each day. The majority (80%) did not see any issues with the establishment's management that could be detrimental to the proper functioning of the MCOH. On the other hand, the majority (54.2%) stated that their opinions and their ideas were generally not taken into consideration (Table 2). The main motivational factor nonetheless remained an increase in salaries (Graph 4).

##### ***Influence of the management on the motivation of the employees***

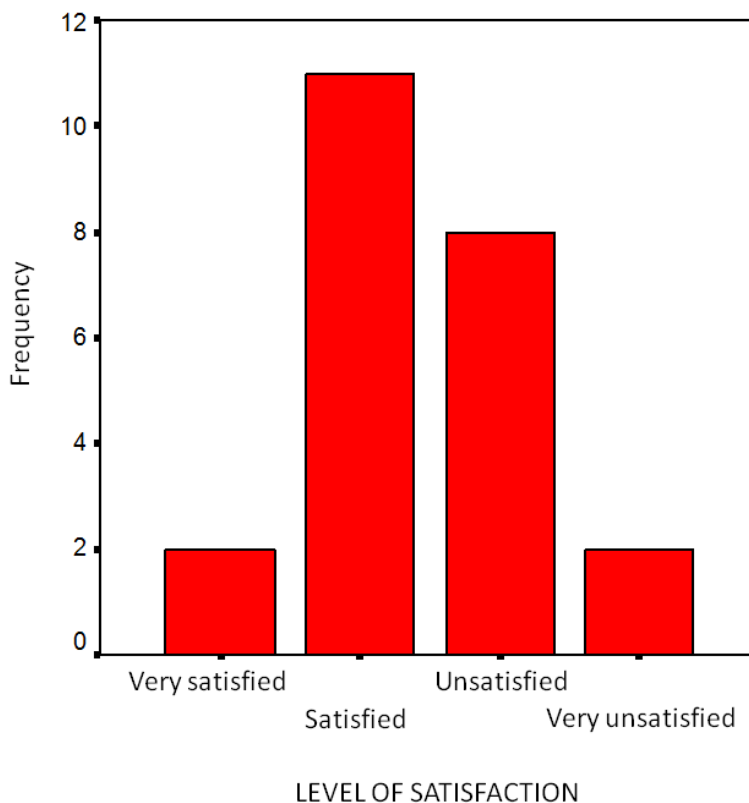
The employees mentioned that the presence of the director did not necessarily have a pronounced influence on their level of motivation. In terms of the heads of department, their impact on the employees was not very pronounced (Graph 4). Yet, close to 86% of the employees said that they appreciated the leadership qualities of the director.

##### ***Various comments by the employees***

With regards to comments made in the survey, the employees (100%) said that they were very proud to represent the MCOH. All of them were very satisfied with the job rotation system. The internal rules were well known by the employees (100%). Continued training comprised another priority issue for the employees who deemed that they did not receive enough of this (79.2%). This survey allowed the wishes and the motivation of the employees of the MCOH to be measured. There were numerous ideas and proposition, which allowed the substantial potential for improvement coming from the employees not to go untapped.

#### **DISCUSSION**

Despite some substantial sources of bias, this study has allowed insights to be gained regarding the strengths and the weaknesses of the MCOH. For the patients who



**Graph 3.** Frequency according to the satisfaction in regard to the current salaries.

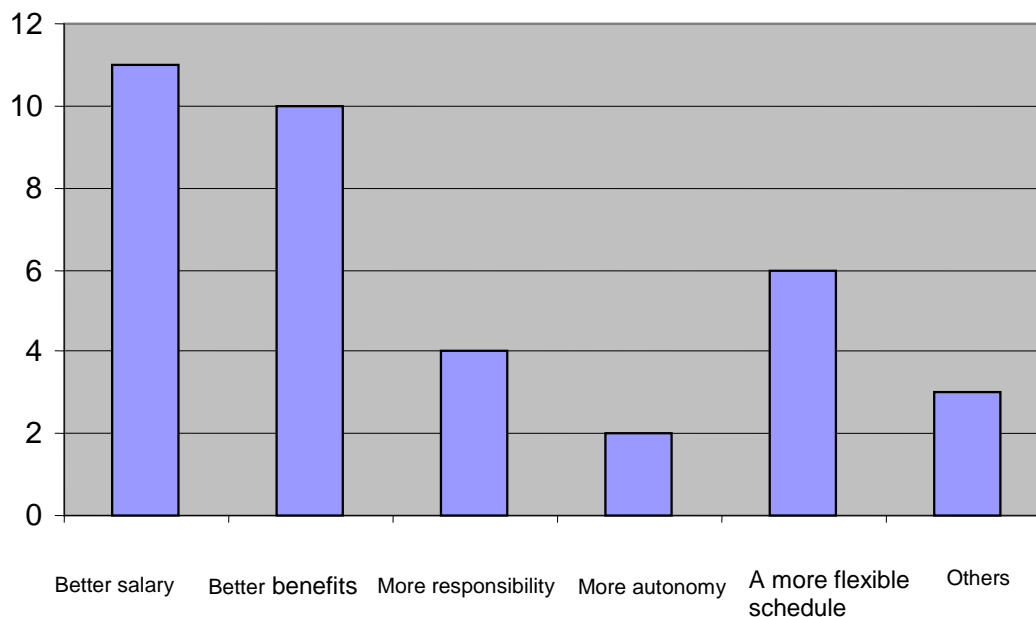
**Table 2.** Extent to which the opinions and ideas of the employees are heeded when it comes to decision making.

	Frequency	Percentage
Fully	3	12.5
Partially	8	33.3
A little	6	25
Not at all	7	29.2
Total	24	100.00

could neither read nor write, the replies to the questions were at times evasive, which left it up to the surveyors to interpret and set aside replies to questions that were not understood. Generally speaking, it seems fair to say that the survey adequately represents the patient comments and the MCOH's reputation of excellence. Consequently, the outcomes of the surveys should be taken into consideration so as to provide appropriate solutions with regards to the weaknesses that have been enumerated. Quality of care is currently a key concern for a number of healthcare centers (Bougmyza et al., 2011). Yet measuring the quality of medical services remains a difficult task (Mosadeghrad, 2013). Indeed, satisfaction is a subjective notion that reflects the preferences and the expectations of the patients (Bougmyza et al., 2011).

There are numerous daily complaints from users, particularly for highly frequented health services, with regards to waiting times, admissions, organization of the services, communication, cleanliness and the costs of the procedures (Moifo et al., 2014). Furthermore, patient dissatisfaction has a very negative influence on assessment of the care that was provided, and on patient loyalty (Diallo et al., 2011). Their opinion is seen as an indicator of the quality of care. Improvement of the quality of services in a dental center requires taking into account patient opinions regarding their treatment. This is particularly so given the strong level of apprehension that patients have regarding dental care. Despite a nearly inordinate (99%) level of loyalty, the MCOH must nonetheless continue its efforts at expansion so as to be





**Graph 4.** Weighting of various motivational factors among the employees.

able to continue to meet the increasing demand for its services. By linking the increased level of consultations with the loyalty of the patients, we can definitively affirm that investments and development are more than basic requirements to meet the demand. The figures derived from the survey provide a strong argument in favor of development of the MCOH. It is easy to conclude that the MCOH is an essential asset for the municipal policy. The presence of the MCOH in the town appears to fulfil the needs of thousands of individuals. Support for the social costs and the quality of the service provided are a key factor of success.

The staff survey had an excellent outcome, and the sources of bias were slim. Only one employee could not be surveyed. Aside from a single exception, all the employees could read and write, and this assisted with the survey. Yet the negative perception with regards to the confidentiality of the data could have hampered the truthfulness of the employees' replies. It is important that the provision of quality service is accompanied by a high level of staff motivation. Indeed, it would be difficult to sustain client satisfaction without also a good level of employee satisfaction (Lambrou et al., 2010). This study has found that salary-based motivation was the most common factor (54.8%) for the employees of the MCOH, followed by social benefits (41.7%). Twenty-five percent wished to have a more flexible work schedule. Lambrou et al. (2010) nonetheless reported in their study that a sense of professional achievement was the main reason for satisfaction among healthcare staff, followed by salary-based motivation, team work and assigned delegations. Patient satisfaction is hence intrinsically linked with the motivation of the healthcare staff. Indeed,

patient satisfaction is derived from their perception of the staff's level of healthcare training, the care procedures, and the outcomes of the services provided (Manary et al., 2013). This study has found that the employees were very motivated and proud to be representing the MCOH (91.7%). They were reasonably satisfied with their current salaries (58.3%), and with the leadership provided by the director. The individuals in charge of the health service hence act as levers for the employees whom they are in charge of. Thus, 86% of the employees were sensitive to the leadership abilities of their director. The supervisors need to be able to inspire their subordinates. Furthermore, the staff said that the absence of the director would neither affect their motivation nor would it lead to a decrease in performance, provided that this absence was temporary. The supervisors therefore have an impact on productivity. The level of motivation nonetheless remained high, thus proving that the employees appreciate their jobs as well as their work environment. The presence or absence of heads of department does not appear to influence productivity. In a study undertaken in Burkina Faso, Méda et al. (2012), showed the importance of leadership in the functioning of health districts. Their study found that a dynamic view and leadership exerted by the team responsible for the district allows for increased access to care, and better outcomes for reducing health problems of populations to be achieved. This same study indicated that it is crucial that there is a rigorous selection process for appointing those in charge of operations. Their level of involvement, and their views with regard to the system should be central features of the recruitment process. Clearly, it is an important motivational factor in terms of job



enrichment and its implementation should be permanent. The person in charge should cultivate the team's spirit. Indeed, a Malawian study found that team spirit was an important motivational factor for healthcare staff (Kok and Muula, 2013). In France, the study by Rouban (2010) with regard to public sector employee motivation has also shown that French civil servants saw little merit in remuneration issues and personal achievement. The interests of the group took priority. Kok and Muula (2013) also reported that low salaries, an absence of continued training, the workload, a lack of recognition, insufficient supervision and communication gaps are the main factors for demotivation. The study by Awases et al. (2013) in Namibia with regard to the nursing profession showed that 79.6% of the surveyed group deemed that the lack of recognition of the rigorous nature of the job was an important factor for demotivation. This same study reported that the lack of equipment in poor countries was a source of demotivation (57.5%). Furthermore, a Tanzanian study of health training reported a high level of absenteeism and a very low level of productivity. This study linked this with a demotivation of the health staff (Manzi et al., 2012). This survey has uncovered a number of priorities for the employees. It has allowed recommendations to be formulated so as to improve the productivity of the MCOH.

In the short term, actions to be taken are to improve the subsidy of the pharmaceuticals stores, digitize billing to facilitate the accounting, update the status of the MCOH, create an employee handbook, reorganize the management of patient flow and fully overhaul the management of supplies. In the medium term, maintenance of equipment and the premises must be improved. A system for complete quality has to be implemented. A budget for training of employees must be established and the accounting system digitized. The process of communications between the bosses, the managers and the staff members must be analysed. In the long term, the following actions must be taken:

1. Digitizing patient files or installing an archives room;
2. Maintaining and developing established partnerships;
3. Rewarding efforts made by employees and increasing performance benefits;
4. Valuing employees more;
5. Establishing a workplace health and safety program;
6. Setting aside a room for use by just the employees;
7. Implementing a system to manage human resources;
8. Implementing a system of rotation to improve the work rhythm.

## Conclusion

This study showed that the MCOH is running in an efficient manner. The MCOH must maintain its momentum and try as much as possible to avoid the pitfalls and weaknesses that could hinder its efficiency.

Development of the quality of its management must be emphasized. Furthermore, it is important to ensure that employee suggestions are taken into account, as these are an important component of satisfactory patient treatment. The key factors for success are numerous, and emphasizing them in order to mitigate operational difficulties is a priority. While it allows the importance and the relevance of involvement of communal systems in the management of health services to be noted, analysis of the way the MCOH is managed also provides an update with regards to inadequate management of this unique example in Burkina Faso. Indeed, this purely and entirely communal health service constitutes novelty in the medical area in the country of honest men. Based on patient surveys, the way it is run appears to provide satisfactory results. This study should assist the decision makers of the center in undertaking concrete actions in the short-term to improve daily management of this municipal gem. Prevention measures of carious disease must be taken vigorously by the Ministry of health in light of the high prevalence of endodontic emergencies.

## Conflict of interests

The authors have no conflict of interests to declare.

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